

THE ECONOMICS OF FARM RELIEF

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A SURVEY OF THE AGRICULTURAL
PROBLEM

By

EDWIN R. A. SELIGMAN, LL.D.

McVickar Professor of Political Economy
Columbia University



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PREFACE

In August of this year I was asked by my friend, Mr. John J. Raskob, the Chairman of the National Democratic Committee, to study for him the problem of farm relief. After ten weeks of intensive work the survey was completed shortly before election. I decided, however, in order to preserve the scientific character of the study, to withhold publication until after the political turmoil was over. It need, of course, not be emphasized that I have accepted no remuneration for my services.

In the course of the investigation I soon realized the complexity of the problem and was overwhelmed by the wealth of material. After working through the official documents I naturally consulted the more important contributions by scholars and statesmen. Most of these, however, were concerned with special points. Very few indeed endeavored to deal with the situation in a broader way. I make no claim to be an agricultural expert; but if there is any value to be attached to my presentation, it may be found in the attempt to marshal the pertinent considerations in a consecutive fashion and to bring general economic principles to bear on the situation as a whole.

As time went on, I did not hesitate to seek the

advice of friends and the criticism of experts. Mr. Robert A. Love furnished me with detailed memoranda on various phases of the problem which it would have taken me many months to elaborate. A comprehensive report on coöperation was prepared by Professor Kayden, of Sewanee. Mr. George E. Roberts, of the National City Bank, supplied me with much material and well-considered correspondence. Communications replete with valuable suggestions were furnished by Governor Frank O. Lowden; Mr. Chester A. Gray, of the American Farm Bureau Federation; Mr. Charles J. Brand, of the National Fertilizer Association; Mr. Chester C. Davis, of the Agricultural Service; Mr. J. D. Miller, of the Dairymen's League; Mr. B. W. Kilgore, of the Cotton Growers' Association; Mr. Carl Williams, of the *Oklahoma Farmer Stockman*; Mr. C. O. Moser, of the American Cotton Growers' Exchange; Mr. A. E. Taylor, of the Food Research Institute; Mr. George H. Barr, of the Saskatchewan Wheat Pool; Mr. Aaron Sapiro; Mr. Bernard M. Baruch; and Dr. Howard G. Brownson, of Des Moines.

Professor B. H. Hibbard, of Wisconsin, and Dr. H. C. Taylor were good enough to send me lengthy comments. The experts of the Department of Agriculture, who constitute what amounts to a wholly admirable Research Institute of Agriculture, and

especially Messrs. O. E. Baker, Eric Englund, L. C. Gray and M. Ezekiel, were prodigal of advice and information. Mr. Joseph S. Davis, of the Food Research Institute, commented at length on the various drafts of the survey. My colleagues Professor Wesley C. Mitchell and F. C. Mills kindly read the final draft and offered valuable criticism.

Many others, too numerous to mention, representing every possible point of view, contributed rich material and interesting suggestions. Without the constructive comments, the acute criticism and the unfailing encouragement of these gentlemen, it would have been impossible for me to complete the allotted work in anything like the time at my disposal.

E. R. A. S.

Columbia University
December, 1928

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INTRODUCTION

The present plight of the American farmer is a matter of universal knowledge. At perhaps no preceding period in our history have the complaints been so protracted and so loud.

The returns of agricultural enterprise in almost every line have for the last few years been meager and inadequate. With the disappearance of agricultural profits, mortgages have been foreclosed, the most strenuous efforts have failed to bring corresponding results and a pronounced net exodus from the farm to the town has taken place. The disaster that has overtaken the farmer has reflected itself in other domains of economic life. With the decline in his purchasing power, failures have multiplied, banks have been injured, railway earnings have been reduced, local finances have been embarrassed, public improvements have been impeded and the middleman has been put into a difficult situation.¹

¹ Much study has been given to the problem and many reports have been published. Beginning with the *Report of the Joint Commission of Agricultural Inquiry*, 1921-22, in four parts ("The Agricultural Crisis and Its Causes," "Credit," "Transportation," "Marketing and Distribution"), we note the *Report of the National Agricultural Conference*, 1922; *The Wheat Situation: A Report to the President*, by Henry C. Wallace, Secretary of Agriculture, 1923; the *Report of the President's Agricultural Commission*, 1924; the *Report of the*

It is clear that the problem is a complex one. Prescription of remedies must always be preceded by adequate diagnosis. This is not an easy matter. In economics, as in every social science, the deeper we probe into any situation, the more tangled and interlaced do we find the roots of the difficulty. Moreover, although our understanding of economic life has made immense strides since the origins of scientific analysis a century or two ago, we have only begun to lift the curtain which separates the known from the unknown. While we have succeeded in grasping the operation of some of the important factors and in attaining a better comprehension of the responses of human beings to changes in conditions, we are yet far from having reached a satisfactory understanding either of human beings themselves or of the environment in which they move. This explains the great differences of opinion

American Council of Agriculture, 1924; the *Hearings* on the various relief bills; *The Agricultural Problem in the United States*, published by the National Industrial Conference Board, 1926; *The Condition of Agriculture in the United States and Measures for Its Improvement: A Report by the Business Men's Commission on Agriculture*, 1927; and the *Report on the Agricultural Situation by the Special Committee of the Association of Land Grant Colleges and Universities*, 1927.

Because of the abundance of facts found in these reports as well as in the publications of the federal Department of Agriculture, only the most indispensable statistics will be used, and even then sparingly, in the following survey.

which are found among sincere and able thinkers on the problem of farm relief.

In order to prepare the way for an analysis of the present situation it may be well to devote some consideration to the general development of agriculture and the position of the American farmer. This, together with an analysis of the underlying economic theory, will facilitate the discussion of the practical problem that confronts us.

CHAPTER I

THE AMERICAN FARMER IN THE LIGHT
OF GENERAL DEVELOPMENT

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1. THE EVOLUTION OF AGRICULTURE

Modern civilization was ushered in by the cultivation of the soil. In a self-sufficing community the primitive methods of agriculture persist indefinitely, and population is strictly limited by the conditions of food supply. When trade and commerce assert themselves, new lands are made available, industry begins, population and capital increase and extensive farming gives way to more intensive methods. With the growth of freedom and of competition there develops an equilibrium or adjustment between agriculture and the other forms of enterprise, brought about by the transfer of labor and capital and by the operation of the economic motive, designed to secure the greatest result with the least sacrifice.

The recognition of this fact was, in former times, obscured by the doctrine of the superior productivity of some particular form of enterprise. Thus the school of the Physiocrats, or so-called Economists, in eighteenth century France taught that agriculture was the only productive activity because it alone yielded a net produce. This conclusion was softened

by Adam Smith who, although not accepting the doctrine of the sterility of industry and commerce, still held that agriculture was more productive than anything else, because in it alone nature works along with man.

The modern view is different. It maintains that the relative productivity of any kind of economic activity changes from time to time according to the particular conditions. At one period agriculture may be more profitable, at another commerce, at still another transportation, at another industry. After the downfall of the Roman Empire, for instance, the economic world reverted to a predominantly agricultural civilization. It was not until the eleventh or twelfth century that commerce started anew and town civilization, based upon trade opportunities, became the basic factor in the life of the countries bordering on the Mediterranean. In the seventeenth century the accumulation of capital led to an industrial development which is responsible for the growth of the national state; a century or two later there was ushered in the beginning of our modern factory system. The commercial revolution was due to the opening up of new trade routes; the industrial revolution was connected with the utilization of machinery; the agricultural revolution is traceable to alterations in the methods of tillage and the cultivation of fresh lands.

With each change there has come a shifting in the balance of economic forces and in the relative productivity of economic activities. England was predominantly agricultural in the seventeenth century; it became predominantly commercial in the eighteenth; it grew to be predominantly industrial in the nineteenth. At each period a new equilibrium of economic forces asserted itself. This equilibrium does not mean the same level in all of the different forces: it implies that the conditions of economic life are so adjusted as to preserve the relative superiority or inferiority in each branch of activity. Any change which elevates the standard of profitability in one and depresses it in another alters the balance of economic forces and engenders a readjustment. Under modern conditions these changes are due sometimes to world conditions; sometimes to national conditions; sometimes to local conditions.

On a broad view of economic development the prosperity of the farmer depends at bottom upon the relation of population to land. There is in general a tendency for population to increase up to the limits of the food supply. This pressure of population upon land compels in the long run the resort to poorer lands or to a more intensive application of labor and capital to existing lands. The consequent rise in the relative prices of agricultural products can be held in check, or even counterbalanced, by cultivation of

fresh and better lands or by the application to agriculture of mechanical or other improvements — in other words, by lower costs. But while agriculture and industry tend to follow different paths, there will at any given time be a balance between them. This balance is subject to continual change and constant readjustment.

The development of American agriculture manifests the truth of the considerations which have just been adduced. Up to the close of the eighteenth century, when the community was still overwhelmingly agricultural in character, the chief products in the Northern and Middle States only just sufficed for the demands of a rapidly growing population, due primarily to a high birth rate and a continuous immigration. It was only in the more favored sections of the South that any crops were raised for export — chiefly tobacco and, to a minor extent, rice and indigo.

Toward the end of the century several developments took place. Cheap land, the invention of the cotton gin, and the growth of canals increased the agricultural possibilities in both South and North. But other forms of enterprise now for a time played a still larger rôle.

At the beginning of the nineteenth century, the Napoleonic wars made the American ships the carriers of the world's commerce, so that an immense

impetus was given to foreign trade. A little later the War of 1812, with the antecedent period of embargo and non-intercourse, led to the industrial revolution in the North and, aided by the new tariff legislation, brought about the rise of the factory system. Industry rather than commerce now became the attractive pursuit.

In the meantime agriculture was pursuing its steady course. The increasing demands of the cotton industry abroad and at home gave a great impetus to Southern agriculture. The spread of the railroads, which soon reached the fertile Mississippi Valley, engendered the phenomenal growth of wheat, of corn, and as a result, of hogs and cattle. The period of rising prices was due in large measure to the discovery of gold. This, as well as the growing home market which attended the development of industry, made for a rapidly advancing agricultural prosperity.

The passage of the Homestead Law in the sixties and the consequent unlocking of the resources of the Middle West contributed to an era of surplus production on a hitherto unknown scale and rendered large exports possible. The high returns from the virgin lands were soon capitalized into rising land values throughout the country, except in the South, where it took some time to recover from the ravages of the Civil War, as well as in the older sections,

which were exposed to the competition of the West, and which were able only slowly to adjust themselves to the new conditions.

By the end of the century the supply of free lands had become well-nigh exhausted and the steady shifting of the centers of wheat, corn, pork and cattle production seemed to come provisionally to an end. The remarkable growth of industry was adding to the urban population, and became responsible for a change in the character of our exports. While both industry and agriculture had suffered periodical oscillations, the tempo of general progress was well marked. The rapidly increasing population enjoyed an even more rapidly growing wealth.

In the opening years of the present century agriculture experienced two important changes. The one was a still more marked decrease in agricultural exports, with the exception of cotton. The other was the transfer of the frontier, with its virgin lands, across the border into Canada. This now loomed up as a formidable competitor in cereals, just as formerly the new West had been the great competitor of the East. With the disappearance of the free lands and the provisional completion of the main arteries of railroad transportation, the trend to industry became more pronounced. Just as Great Britain, which was an exporter of foodstuffs during the later middle ages, went over to an import basis in the eighteenth

century, so it seemed that we also were approaching the period when the agricultural output would only just suffice for our growing population and when our food exports would cease.

Passing by for the moment the dislocation of world conditions by the War and the reaction upon our own agriculture, which constitute the framework of the present discontent, the above recital of the broad facts of economic development both abroad and at home lends point to the following observations.

There is under modern conditions and largely as a result of the commercialization of society an inevitable progress of industry in its relation to agriculture. In each country in turn where we find the prevalence of new opportunities, of fresh land and of low costs, agriculture is at first in a highly prosperous condition. As industry and population increase in the older countries, the superiority of the new lands abroad leads to a relative diminution in the importance of agriculture at home and to the existence of exports on a large scale from the newer countries. As these in turn are attended by a distinct industrial development, the home market grows and takes care of most of the agricultural output, while with the increase of cost on the no longer virgin lands agricultural exports diminish until we may even reach the stage of agricultural imports. Not un-

til the whole world has been settled, and the new and fresh lands have disappeared, will there be a more stable balance between industry and agriculture and a more permanent adjustment of population to food.

This gradual progress of industry in any one country is, however, only a relative fact. It does not mean either positively a smaller acreage or absolutely less farmers or actually less prosperous farmers. The shift in the position of agriculture proceeds only to the point of marginal opportunities; but the margin itself is not necessarily a receding one. The total increase of wealth in the community may be, and in every progressive community ought to be, such as to permit of a continuous progress of agriculture, compatible with a similar advance of industry.

2. THE PROGRESS OF THE AMERICAN FARMER

If we test these statements in the light of American development for the past century and a half, the facts of steady progress are incontrovertible.

Consider first the size of the agricultural population and the number of farmers. In accordance with the increasing industrial growth, there has been a relative diminution in the agricultural population. This will be seen from the familiar figures for the past half century, appended herewith. The population and the number of farms are given in thousands.

Year	1880	1890	1900	1910	1920	1925
Urban population	14,358	22,298	30,380	42,166	54,804	62,848†
Rural population *	35,798	40,649	45,614	49,806	51,406	52,532†
Percent of total	71.4	64.6	60.	54.2	48.6	45.5
Farm population	-----	-----	-----	-----	31,614	29,023
Number of farms	4,009	4,565	5,737	6,362	6,448	6,372

* In places less than 2,500.

† Estimated.

The table shows, with the exception of the last few years, a positive and steady increase in the rural population. Although there have been relatively fewer people in the non-urban districts, there have been, until 1920, absolutely more people on the farms from decade to decade. This was of course to have been expected, as a result of the general increase of population.

So far as concerns acreage, we cannot speak of relative figures, for there is nothing in relation to which we can compare it. As regards the absolute amount of acreage, there has again been on the whole a steady and continual increase. This appears from the following table, in which acres are given in thousands:

Year	1850	1880	1900	1910	1920
All lands in farms	293,561	536,082	838,592	878,798	955,884
Improved land	113,033	284,771	414,499	478,452	503,073

The same situation is to be observed in the amount of output or yield. So far as relative productivity is concerned, our statistics have not existed for a period sufficiently long to enable us to compare the

productivity of agriculture with that of industry. As we pointed out above, however, there has been a constant change in the profitableness of the various branches of enterprise. It may safely be affirmed that on the whole, with a decline in the amount of fresh lands on the one hand and with the augmented opportunities for industrial investment on the other, there has been, since the beginning of the present century at least, a relative decrease in agricultural as compared with industrial earnings. This is, however, entirely compatible with an absolute increase in agricultural production. The annual yield shows, almost from decade to decade, a steady progress, as is apparent from the figures herewith, which represent millions.

Year	1850	1880	1900	1910	1920
Corn, bu.	592	1,717	2,505	2,886	3,208
Wheat, bu.	100	416	603	635	833
Cotton, bales	3.2	6.4	10.1	11.6	13.3
Sugar beet, tons	-----	2.7	163	1,025	1,453

It follows from the above that the same situation is true as to the growth of land values and of the national wealth invested in agriculture. Since land values are nothing but a capitalization of present and expected yields, it is obvious that when we start out with free land — that is, land without any value — the facts of progressive utilization lead to a constantly increasing capitalization of the yield into growing land values. Here again, with the steady urbanization

of the country, land values in the cities and towns have been increasing at a faster rate than agricultural land values. Despite this relative decrease, however, there was up to 1910 a steady and positive increase in the country as a whole. This general increase is of course compatible with the fall in land values in the older sections, which were exposed to the competition of the virgin lands in the West. After 1910 there came the prodigious inflation of the War, and the subsequent reaction in land values is apparent from the following figures, in millions of dollars:

Year	1850	1880	1900	1910	1920	1925
Value of farm property	3,967	12,181	20,440	40,991	77,924	57,018
Value of land and buildings	3,272	10,197	16,615	34,801	66,316	59,467
Value of land alone	----	-----	13,058	28,476	54,830	37,721

We come finally to the standard of life. Here again the available statistics do not permit us to give exact figures as to the relative changes in living conditions in farm and city from the beginning. The absolute improvement, however, of the standard of living in the rural population is beyond all peradventure. The modern farmer has on the whole participated in the increasing prosperity of the country. The hard conditions of the pioneer settler have given way to the comforts of modern times. The general advance of American prosperity has prevented the farmer from being reduced to the position of the peasant or the ryot. On the contrary, with the increase in his purchasing power there has come a more variegated diet

and the possibility of securing the distant products put at his disposal by modern transportation and modern commerce. The life of the farmer has been enriched by the telephone, the electric light, the radio and the automobile. Taking it all in all, the American farmer — at least the typical white farmer — is perhaps the most prosperous representative of the tiller of the soil that has yet been disclosed by history.

While this generally satisfactory situation is true of American development as a whole, there have been occasional interruptions. Passing over the previous periods of change which possess chiefly an historical interest, let us consider a little more closely the development since 1900. This may be divided into three periods: the period up to the World War, the years of the War itself, and the post-War period.

3. THE DEVELOPMENT SINCE 1900

In the period from the beginning of the century to the outbreak of the World War, the influence of several new factors is evident. Population was growing rapidly; immigration attained unheard-of figures; industrial prosperity was pronounced. On the other hand, the limit of the free lands had been reached. The rate of increase in agricultural output was gradually curtailed, and production of food did not keep pace with the growth of population. This change soon reflected itself in a reduction of the surplus yield

above the domestic requirements. The exports of wheat, of pork, and of beef fell off, some of them considerably; and even in cotton there was a decided slowing up in the increase of exports. Wheat and flour fell from 235 million bushels in 1902 to an average of less than 79 million in 1910-12; corn fell from 213 million bushels in 1900 to less than 11 million in 1913; fresh beef fell from 352 million pounds in 1907 to 6 million in 1914; bacon fell from 650 million pounds in 1898 to 152 million in 1910; butter and cheese fell from 79 million pounds in 1898 to 6 million in 1914.¹

During this period, however, the prosperity of the farmer was none the less marked. We were rapidly approaching the normal situation which may be expected ultimately to mark the condition of American agriculture — the serious reduction or even the possible disappearance of agricultural exports, with the exception of those for which, like cotton, we may continue to enjoy specially favored conditions, coupled with the continued prosperity of the farmer resting upon the growth of the home market, provided by industry.

The second period includes the hectic episode of the War, when there devolved upon us the obligation of feeding the Allies. An artificial stimulus was given

¹ Cf. E. G. Nourse, *American Agriculture and the European Market*, 1924.

to agricultural production. Never before was there such a rapid growth of acreage and of output. Every acre of land which could possibly be utilized was put under cultivation; every possible effort was made to increase the amount of production per acre. The result was an unparalleled growth of output; and the prices, now fixed in some products at a minimum instead of a maximum, yielded prodigious profits which were soon reflected back into swollen land values. Never before had the farmer enjoyed such prosperity. To the extent that he put his profits into the savings bank, into the purchase of securities, agricultural machines, automobiles, victrolas and similar comforts or luxuries, his prosperity was real. In so far as he devoted his profits to the buying of more land, his profit was chiefly on paper. In the main, however, well-being and contentment were widespread, as is always the case in a period of great and rapid inflation.

Then came the reaction, a reaction that was shared by industry in general in 1920-21. The fall in agricultural prices was accentuated, moreover, by several facts. During the War, prices of agricultural products had been kept at a high level through the system of minimum prices whereby, in order to stimulate production to the greatest possible extent, a minimum was fixed for various food products. With the coming of peace, this whole artificial struc-

ture disappeared, leaving prices to be regulated by the ordinary conditions of the market. These factors now combined to bring about a great fall in prices. Demand shrank not only because of the coming of peace but because of the collapse of the foreign market through the diminution of the purchasing power of the European nations which had been so hard hit by the ravages of war. Supply was relatively greater not only abroad but also at home in proportion as the increased numbers of cattle and hogs which followed the impetus of the War made their effect felt. Increase of supply, diminution of demand, disappearance of minimum prices: all these combined to accentuate the severity of the crisis.

The third period, from 1920 to the present, thus started out very badly. In industry the recovery came fairly quickly, owing partly to the fact that we now became the creditor of the world, partly to the lessons of industrial integration and mass production that we had learned during the War, and partly to the growth of the new automobile industry, which soon became the most important in the country. In agriculture the situation was slow in bettering itself. This was due to several reasons.

In the first place, the situation in the European countries became on the whole worse rather than better. In their frantic attempt to escape from the difficulties imposed upon them by the conditions of

peace, most of the conquered nations resorted to the dangerous expedient of unlimited fiat paper money, which culminated in a complete collapse a few years later. The well-nigh universal distress and the resultant lowering of the standard of life prevented any marked restoration of the pre-War purchasing power. The demand remained relatively low.

On the other hand, the conditions of supply became more unfavorable. Canada, Australia and South America, whose output had been growing for some time as a result of natural causes, now vied with each other in utilizing the vast expanses of land which had been brought into cultivation under the incentive of war conditions. This great increase of area far more than offset the slight recession of acreage devoted to food products in the United States which occurred after 1920. Moreover, not only was the acreage considerably increased, but the additional area so utilized was in great measure fresh and virgin land with large output and relatively small costs per acre. The net result was not only a greater but a cheaper supply.

The effect upon American agriculture was pronounced. Lands near the margin of cultivation which had been prosperous during the War now felt the competition of the lower-priced lands in the rest of the world. With their higher costs of production, in the face of low prices, they could no longer success-

fully compete. The situation in the country as a whole became similar to that of half a century earlier in the East. There began a process of embarrassment analogous to that which in the preceding period had led to the era of deserted farms.

The third reason for the delay in readjustment, and perhaps the most important of all, is one which is only beginning to be understood and appreciated. When the immediate crisis was over, many supposed that the delay in the coming of renewed prosperity would be short-lived. But as the period of distress lengthened from year to year, economists began to realize that some other factors must be at work. During this period it so happened that more careful studies were made into the nature of business cycles and the conduct of agricultural prices. An increasing number of scholars gradually reached the conclusion that great significance must be attached to the way in which agricultural prices respond to changes in the general price level, and especially to the different tempo in the response of the separate factors of cost during a period of falling prices. These points, which will be more fully discussed in the next chapter, have contributed their share to the slowness of the readjustment and to the continuance of the depression.

While these conditions were the inevitable aftermath of the War, it is to be noted that factors were at work which, even without the existence of the

War, would have caused this third period to present characteristics quite different from those of the pre-War period. In other words, marked changes in basic conditions, entirely unconnected with the War or the aftermath of the War, were taking place.²

In the pre-War period, as we have seen, population was increasing rapidly in relation to the food supply. Now, on the contrary, the increase in the rate of population growth began to slacken. The decrease in the birth rate, a tendency which had already become apparent for some time, was now more marked; and above all, the restrictive immigration laws added a continually smaller number to the population. From 1905 to 1914 there were five years when immigration exceeded the million mark; from 1918 to 1927 there were only three years when it exceeded the half-million mark. On the other hand, agricultural production was growing at a faster rate, for several reasons.

In the first place, we note the increasing mechanization of agriculture. At no period in our history has there been a more decided improvement of agricultural machinery or a more rapid introduction of

² A thoughtful presentation of some of these points is found in "Population, Food Supply and American Agriculture," an address by O. E. Baker, of the Government Bureau of Agricultural Economics, at the meeting of the Farm Economic Association in Washington in December, 1927. Cf. also for a somewhat similar point of view E. G. Nourse, "The Outlook for Agriculture," in *Journal of Farm Economics*, Vol. IX (1927), p. 21.

newer machines. The period has been marked in the case of cereals by the utilization of the combine, or tractor-driven harvester-thresher, and the four-plow cultivator. Originally intended for wheat, the combine is now used successfully in flax, oats, barley, rye, soy beans and clover. More recent is the use of the mechanical drier in hay and alfalfa; and while in cotton the tractor picking-machine has only just been introduced, the Western cotton belt has witnessed the employment of the stripping "sleds" or snapping method of harvesting,³ and all over the South much progress has been made in the use of machinery in other phases of production, such as the multi-row planting and cultivating tractors.

Secondly, the automobile and the tractor have replaced to an increasing extent the use of horses, and even, to some degree, that of mules. The amount of acreage which was needed in order to produce the hay and oats for the horses has been set free for other purposes. It has been calculated that not less than twenty millions of acres have in the last few years been in this way made available for the increased production of other crops.

Thirdly, modern methods have rendered possible a far greater productivity per unit. This is true not only of the ordinary crop yields under the more in-

³ As to cotton harvesting, cf. *The Year Book of Agriculture*, 1927, p. 223.

tensive system,⁴ but it is especially apparent in the development of the dairy industry. We have to note likewise the better utilization of feed in general, and the higher and better rate of production in pork and lard.

Fourthly, there has been a shift in various parts of the country from the less to the more productive crops, together with the employment in certain sections of an increasing amount of diversification.

Fifthly, there has been in cotton cultivation a reversal of the general transition from better to worse lands. For in cotton the opening up of the fresh lands in western Texas and Oklahoma, with their apparent immunity from the ravages of the boll weevil, has meant a prodigious increase in productivity.

Finally there have been at work economic changes, both in the conduct of agriculture itself and in the wider economic life with its reactions on the farm, which have made agricultural prices more sensitive than in earlier periods, and which have tended to accentuate both the fluctuations and the depression. This will be considered more in detail in the following chapter.⁵

⁴ Cf. B. O. Weitz, *The Trend Toward a More Effective Use of the Land as Shown by the Yield per Acre of Certain Crops*, Department of Agriculture, Bulletin No. 1458, 1926.

⁵ An interesting discussion of some aspects of this situation will be found in G. F. Warren, "Which Does Agriculture Need — Readjustment or Legislation?" in *Journal of Farm Economics*, Vol. X (1928), No. 1. Mr. Warren's criticism of the overproduction theory of

We see thus that even if there had been no war, the market conditions of demand and supply in this third period would have shown a distinct contrast with those in the pre-War period. Demand was relatively decreasing, supply was relatively increasing. Prices would therefore have in themselves tended to fall. ✕

If we add these effects to those which were the direct consequences of the War, we can appreciate more fully the gravity of the situation. The expansion of our acreage and output, the more recent growth of cheap agricultural production in Canada, South America and Australia, the decrease of the world purchasing power—these were the direct consequences of the War. But hand in hand with these changes came the reduced rate of increase in population, the actual augmentation of world acreage, the still greater growth of productivity and the broader economic changes which were unconnected with the War, like the diminished per-capita consumption of calories in the United States, with a lighter, albeit more varied diet. The combined influence of these two sets of factors has been to reverse the process of the preceding decades. Instead of bringing us closer to the period of deficit farming, where more and more of our needs would the present distress suffers, however, from his failure to consider the international situation.

have to be met by imports, and where the farmer would find his prosperity in adjusting himself to the conditions of an increased domestic demand, we have now again entered upon a period of surplus farming. Instead of population pressing upon food supply, food supply is pressing upon population. As over against the relative shortage and the high prices of the earlier period, we are confronted by the surplus and the low prices of the present. With this development of the surplus our exports again play an increasing rôle in the situation, and the disposition of the surplus becomes one of the chief factors in a consideration of our present troubles.

The actual depression of agriculture, moreover, is a world phenomenon. For each of the fundamental causes — increased acreage, higher productivity, diminished demand and general economic changes — is operative everywhere, although in different proportions.⁶ These fundamental causes, moreover, are only in part connected with the cataclysm of the War. While world forces have operated with different intensity in different countries, the situation is especially bad in the United States because of the contrast with the prosperity during the War.

It must not be understood from the preceding de-

⁶ Cf. for England R. R. Enfield, *The Agricultural Crisis, 1920-1923*, London, 1924; and for Germany and other countries M. Sering, *International Price Movements and the Condition of Agriculture in Non-tropical Countries*, Berlin, 1927.

scription that there is a universal crisis in agriculture in the United States. The situation has been slowly righting itself as the readjustment has taken place and as the foreign market has slowly been restored. But two considerations obtrude themselves upon us. In the first place, has the community not been derelict in doing virtually nothing to prevent the pains of readjustment? The crisis is to be translated not so much in terms of dollars and cents as in terms of foreclosure of mortgages, of ruined homes, of the wholesale desertion of farms—in short, of human suffering. Is it not fair to assume that a reasonable government policy might have alleviated the rigor of this transition?

In the second place, the transition is by no means over. There are at work, as we have seen, forces which tend to convert the emergency into a permanent situation, or at all events greatly to retard the process of readjustment. We must indeed distinguish between the various farm products in the different sections of the country. The term “agriculture” includes a great variety of different activities. Agriculture yields foods as well as raw materials for industry; food crops include perishables as well as non-perishables; the cattle industry is utterly different from that of wheat or corn; dairy products are not to be assimilated to tobacco or rice. Generalizations are sometimes hazardous. In some sections con-

ditions are now fairly satisfactory. In some products, especially in the case of cattle, where the havoc caused by the depression of the last few years has resulted in a reduced output, conditions are for the time being again fairly good. But in not a few places and in not a few products the situation is still far from satisfactory.⁷

So far as concerns the leading non-perishable staples, perhaps the four great sore spots today are the tobacco, the cotton, the wheat and the corn areas. Forces are at work in each of these which aggravate the difficulties and which darken the outlook.

In the tobacco region the situation has been affected to not a slight extent by the growth of the cigarette habit. This has produced a signal influence on the output of manufactured tobacco — that is, chiefly plug or smoking tobacco — which has suffered not only a relative but an actual decrease in demand. The Burley as well as the dark-tobacco producing regions in Kentucky and Tennessee have been hard hit. In the western tobacco section the outlook for increased demand or better prices is a dubious one, and it is problematical whether we can expect a reversion to pre-War conditions.⁸

⁷ A convenient summary of the situation is *The Agricultural Outlook for 1928*. Prepared by the Staff of the Bureau of Agricultural Economics. Department of Agriculture, Miscellaneous Publication No. 19, February, 1928.

⁸ Of the twenty-nine types of tobacco the chief are the cigarette,

In cotton the situation is different because of the preponderant influence of our supply and because of the gradual restoration of the foreign demand. But even in cotton, the influence of oversupply is marked and the difficulties of seasonal prosperity are pronounced. In proportion as more machinery is used in the cotton fields, we see a gradual transition to the plains and the flat lands of the Southwest. A continually larger part of the old cotton belt in the Southeast finds it difficult to compete on the level of low prices. The embarrassments which, as we shall see later, arise from the fluctuations in price are apt to become more serious.

In the corn belt the recovery from the present depression promises to be relatively slow in coming. There is at present an undersupply of cattle as a result of the crisis and consequently far less than a normal demand for corn to feed cattle. The increase in the supply of cattle, although under way, will not be so easy to effect as it was in previous decades,

the manufacturing and the cigar. In the cigarette type the important varieties are the fine-cured tobacco of the Southeastern states, the Burley tobacco in Kentucky, Tennessee and West Virginia and the Maryland export. In the manufacturing type, which is raised chiefly in Virginia, Kentucky and Tennessee, the leading varieties are the fire-cured, the one-sucker and the Green River tobaccos. In the air-cured cigar types, widely scattered, the chief varieties are the filler tobaccos in Ohio and Georgia, the binder tobaccos in Pennsylvania, Connecticut and Wisconsin; and the wrapper tobaccos in Florida, Georgia and Connecticut. Cf. *Year Book of Agriculture*, 1926, Separate No. 972.

because of the rising cost of production in the range states. The demand for corn, therefore, may be slow in coming back. The demand for corn and oats, moreover, will probably suffer a further reduction as a result of the substitution of the tractor and the combine for horses and mules. Furthermore, the market for pork products from the corn belt does not promise a very great increase. Corn production itself is gradually moving west and north, and this will naturally mean a transfer of the area for the raising of hogs.

Moreover, as has just been pointed out, the only escape from continued depression that seems to be opening up to the cotton growers in the Southeast and the tobacco growers in Tennessee and Kentucky is in the diversification of the production and the adoption of crop rotation. More and more they will themselves grow an increased proportion of the feeds and the foodstuffs that are consumed in the South, and the corn belt's market for pork products, corn, oats and hay will be exposed to additional inroads.

Finally, so far as concerns wheat, not only will the influence of some of these same factors be felt, but the increasing use of the combine, which is specially adapted to the sunny, arid high plains regions, with relatively cheap land, will tend to increase the competition with the central states. It is primarily the red winter-wheat area in the corn belt which will in

all likelihood be exposed to these influences as well as to foreign competition in the world market.

The question then arises, how far is the present situation one simply of transition or to what extent are more permanent factors at work; and if it is a transition, how long may we expect a delay in the readjustment? This opens up the interesting question of the future of American agriculture and the prospects for the American farmer. While it is true that the future is necessarily shrouded in mystery, it may be worth while to consider for a moment what is probably in store for us.

4. THE FUTURE OF AMERICAN AGRICULTURE

The fundamental question is of course the relation of population to the food supply.

So far as population is concerned, there is reason to believe that the tempo of our increase is slowing down. This is due to two causes. In the first place, immigration has been restricted and the chances are that the restriction will gradually become more rather than less rigid. In the second place, the birth rate is steadily falling, even though the decline is decidedly more conspicuous in the urban than in the country districts. It is true that the death rate has also fallen, but the death rate is probably lower than it will remain when the larger number of young and middle-aged immigrants now in this country pass

into the older groups and as the urban population with its smaller families increases in size. Moreover, the decreasing birth rate, both rural and urban, engenders an increase in the average age of the population and thus again tends to raise the death rate. Finally, the tendency to a decreasing birth rate is being accelerated by the birth-control movement, which is spreading to ever wider strata of the population.

If, as is probable, the conjoint influence of these forces continues, the rate of increase in the population will diminish. Some experts even maintain that we shall gradually reach the stationary stage in from fifty to seventy-five years, when our population will probably be between 175 and 200 millions. This presupposes, however, that so far as the more important and fundamental food supplies are concerned, we shall still be on a self-sufficing basis. The prediction does not take into account possible impending revolutions in industry which will lead to a further increase of urban population alimented to a large extent by imports of food, as is the case in Great Britain and Japan today. But this period of increasing population can continue only as long as there is a constant succession of fresh and virgin lands or a continual increase in the output per acre. Sooner or later, unless synthetic chemistry realizes the dreams of some of its enthusiastic advocates,

population will overtake the food supply of the world and we shall again reach the stationary stage, as in the middle ages.

Without speculating upon these far distant periods — for it may be a matter of centuries before this point is reached — it may be well to consider what the situation will probably be during the next two or three generations, at the expiration of which we may have reached the self-sufficing population of 175 or 200 millions.

In order to feed this number of human beings — almost half as many again as exist at present — we shall need both more land and greater productivity. Both of these eventualities are in sight. There are still large areas in this country some of which can be reclaimed by irrigation, some of them also by drainage. In a not inconsiderable part of our empire, nature has been either too lavish or too niggardly in the water supply. Again, the productivity per acre will almost surely increase, for we are only in the beginning of the attempts to apply modern capitalist methods to agriculture. The law of decreasing returns on land will in all likelihood for a considerable period be counteracted by the law of increasing returns to capital.

The great problem, however, is as to the grade of additional land that will be brought under cultivation. For upon this fact, despite improvements in

agricultural technique, primarily depends the question as to the type of farmer who is to till this land. To paraphrase the old French statement of *pauvre paysan, pauvre roi; pauvre roi, pauvre royaume*, we may say in the main *poor land, poor farmer; poor farmer, poor community*. Will the old-time sturdy, stalwart American farmer disappear, to be replaced by the low-grade cultivator? That is the fundamental question.

In Europe the pressure of population upon food and the competition of the newer areas have resulted in the necessity of the cultivation of such low-grade land that, despite the improvements in modern industry, the peasant has been perpetuated. In this country the agricultural acreage is about as large as that of the whole of Europe, whereas the population is less than one-quarter as great. It is accordingly almost certain that we shall not have to resort in the future to the use of such low-grade land as is now customary in a large part of the European states. There is, however, already now in cultivation a great amount of marginal or submarginal land the utilization of which is in a measure responsible for the present difficulties. It is not at all unlikely, therefore, that in the normal course of events and with the additional competition of fresh lands in parts of the world's area that have yet not been unlocked, the marginal agricultural land of the future will be of a

perceptibly lower grade than at present, even if it may not reach the very low grade of parts of the Old World.

5. BALANCE BETWEEN AGRICULTURE AND INDUSTRY

We must peer into the future in the light of the past. Our national policy up to the War offered a rather even-handed and well-balanced development of all of our great economic activities. General industry and business were favored by the legislative policy of protection, by the comparative immunity from taxation, by the more recent improvement of the banking system and by the multifarious activities of the Department of Commerce. Labor received its share through the earlier factory laws and the later development of workmen's compensation and restriction of immigration. Both capital and labor prospered through the recognition on the one side of the economy of high wages and on the other of the advantages of coöperative rather than of conflicting interests.

During this entire period agriculture preserved its balance. The farmer, especially in the North and West, was in the main content with the protective tariff because of his belief in the home market theory, that is, an augmented demand for his products due to the increase in the industrial population and its purchasing power. Even if, as in parts of the

South, he was a little doubtful about this, the farmer, in the newer sections at least, was prosperous because of the national policy of free land, and the consequent assurance of a continual increase of land values. Thus, in the main and notwithstanding occasional interruptions, agriculture and industry prospered together.

The new situation, however, is altogether different. The period of free lands has disappeared. The rise of land values, even though it may again emerge, will probably proceed at a slower rate than at the beginning of the century. Industry has been advancing by leaps and bounds, and wages in the city and factory have increased in both money and purchasing power. As a result the farmer, despite the growth of the home market, is now exposed to the competition of industry and the lure of the town in an entirely new way. The balance which has been almost automatically preserved up to the present threatens to be disrupted.

It is of course possible that the decline of agriculture may be arrested, after the present depression is over and the readjustment has taken place. The application of machinery to agriculture is only in its early stages, and the practice of scientific farming has only just begun. But we must be mindful of two points — the one relative, the other absolute.

The first is that, however hopeful we may be of an

impending agricultural revolution, the possibilities of a capitalistic development are less pronounced in agriculture than in industry. Agricultural production depends primarily on land; industrial production is limited only by our mastery of the forces of nature, most of which may be unconnected with land. As invention proceeds, agriculture will inevitably occupy a minor place in the economy of nations.

In the second place, since the prosperity of the farmer depends so largely on the margin between costs and price, can we reasonably look forward to such a decrease of costs as will compensate for the increase due to resort to poorer lands or to the wearing out of existing lands? The application of capital and science may go far in this direction; but we must not forget the increased costs of other factors like taxation, transportation and the like. While these will be considered in detail hereafter, we may even now draw the preliminary conclusion that in the main, with the subjection of agriculture to the law of diminishing returns, the more probable outlook is for a lessening of the margin between agricultural costs and agricultural prices; for a decrease in the farm population until a balance of attractiveness between urban and rural occupations has been reached; and for a struggle on the part of the American farmer to preserve his customary standard of life.

What may take place in the United States can be inferred from European experience. In England agriculture has been completely overshadowed by industry, and farming has virtually disappeared as a significant factor in the national economy. In some of the Continental countries, like France and Germany, the balance has been kept more even, but only at the price of a population of peasants who have persisted despite a greater productivity per acre than with us. In the United States, were we to allow things to drift, the situation may ultimately be the same, as our arable lands become old and in increasing need of soil replenishment. Agriculture may either be completely overshadowed by industry or may continue to exist on the lower level of productivity associated with low-standard cultivators.

Such a situation is, however, unthinkable. The American farmer is a leading example in the modern world of the independent, self-respecting, intelligent and upright citizen. He has not only the highest standard of life which has ever been secured by a tiller of the soil, but he has the ambition and the determination to participate still further in the opportunities of an advancing civilization. His prosperity and his great purchasing power help to explain the advance of industry and the growing welfare of the laborer. The farmer, in short — chiefly indeed as the product of peculiarly fortunate conditions — has

been in large measure the sheet anchor of our national progress.

It might be objected that the future of the American farmer is secure because he will always be able, in last instance, to repair to the town where wages and the standard of life are high. It is indeed true that the progress of industry has had its undoubted repercussion on the prosperity of the farmer. His welfare has been in no small degree bound up with the town and the factory, not only because the latter have furnished a growing market for his products, but because their activity has created the possibility of the comforts and conveniences of life which have enabled him to share in modern progress. It must be remembered, however, that the development of industry and of great continental cities has not prevented the continuance of the European peasant; and that the growth of the factory system in England has been accompanied by an essentially low-grade agricultural laborer. While there must always be a definite relation between farm and factory, the scales do not necessarily remain evenly poised: they may be adjusted to a temporary or, as in Europe, to a permanent inferiority of the one or the other.

We are confronted, therefore, by a momentous decision. The acuteness of the present agricultural depression will doubtless disappear, as has been

the case in previous depressions. But the farm problem is a deeper one than that of a mere temporary distress. We have not only a transitional problem but a more permanent problem. We must before long decide what kind of country we want to have. Do we desire the permanent inferiority of the farm to the factory, of agriculture to industry, which may bring with it the replacement of the American farmer by a low-standard cultivator; or do we desire the continued existence of both on an equally high plane?

Which we shall have depends in no small degree upon our national policy. In the decades to come, industry will assuredly assume an increasing importance, relatively as well as absolutely, in our national economy, and the lure of the town will constantly become more pronounced from decade to decade. This is indeed inevitable. But what is not inevitable is the absolute, as well as the relative, deterioration of the farmer. The future may conceivably have in store for us an absolute decrease in farm population; but what we do not want and what we do not need is the lower standard of life in agriculture which has so often accompanied industrial progress. We are, in short, at the parting of the ways. A program of negation which will allow world forces to operate unchecked may lead us in one direction; a well-considered program of national action which will help to modify or to control these world forces in our

own interest may lead us in another direction. But let us not deceive ourselves as to the significance of the decision.

The complexity of the present situation consists primarily in the difficulty of the analysis. Are the farmer's ills of a mere temporary character or are they of a more permanent nature? Even if the difficulties are mainly those of readjustment to a more normal condition, is it desirable to leave the readjustment with all its attendant suffering to the blind forces of nature — forces that may indeed in the end be beneficent in their operation, but which may involve a process of acute suffering that is at least susceptible of some alleviation?

This is the real question. It is important, therefore, to analyze the situation more closely and to consider in detail each one of the numerous agricultural problems that go to make up the general picture. Before we can comprehend the real significance of any of these problems, however, it is necessary to let the light of general economic theory on the situation. We begin, therefore, by calling attention to the essential differences between agriculture and the other phases of modern enterprise. This will form the subject of the next chapter.

CHAPTER II
THE ECONOMIC CHARACTERISTICS OF
AGRICULTURE

THE ECONOMIC CHARACTERISTICS OF AGRICULTURE

Agriculture is of course subject to the play of general economic forces. It possesses, however, certain characteristics which set it off from industry and which constitute a diversity of conditions under which general economic laws operate. The differences between agriculture and industry fall under four main heads: costs of production, costs of disposition, prices and more general factors.

1. COSTS OF PRODUCTION

a) The first obvious difference between agriculture and industry is the greater dependence of agriculture upon the whims of nature. While the considerations of weather, of climate, of seasons and of location are often of great influence in industry, they are far more pronounced in agriculture. To the effects of weather and climate we must add the ravages of insects and the prevalence of disease, both plant and animal. These lead to conditions of greater variability and uncertainty of output. Although the uncertainties for each crop as a whole are reduced in proportion as the total cultivable area increases, the smaller group and the individual farmer are exposed

to the full force of these precarious conditions. Leaving until later a more detailed consideration of this point, it may suffice here simply to note that the alterations of surplus and shortage are far more marked in agriculture than in industry.

b) Second, because of the longer time required for agricultural output, varying from several months to several years, as in the case of the meat supply, the turnover is slower. In industry we have a continuous production, the constant reduction in the period of which is limited only by the application of capital and of efficiency. In trade, the turnover of the stock is often exceedingly short. In agriculture, apart from a few exceptionally favored spots like the irrigated districts in the West where we have monthly crops of alfalfa and other products, the yield comes at best only once a year, so that it is difficult to compensate the less successful by the more prosperous periods. The fact of the longer and more drawn-out period of production necessarily augments the hazards of the occupation.

c) Third, there is less possibility of mechanization. It is true that, as stated above, we are only in the early stages of the application of machinery and of modern business methods to agriculture. But, after all, the existence of the arable area itself conditions the extensive use of mechanical appliances. In industry there is little if any limit to the possibilities

of the future and to the multiform ways in which human genius can control the forces of nature. Industrial combination and specialization render possible a constantly increasing output. In agriculture, despite much interesting progress, there is a far less unrestricted field for mechanization. Largely for this reason the ratio of investment in fixed as compared to circulating capital is greater than in industry.¹

d) Fourth, because of the fact that land must continue to play so much greater a rôle in the productive process, agriculture is, on the whole, subject to the law of increasing costs, while industry is governed to a far greater extent by the law of constant or diminishing costs. This fact of relatively decreasing output in agriculture may indeed be checked for a time, as we have seen, by new supplies of land or by the growing mechanization of agriculture. In the long run, however, both of these factors will tend to be inoperative. The time will come in every country when there will be no further supply of fresh lands. When this situation arises, the growing difficulty of maintaining the fertility of the soil, not to speak of producing a greater yield per acre, will more than offset the advantages of mechanization and of the application of capital. In the long

¹ This point is emphasized by H. Belshaw, "The Profit Cycle in Agriculture," *The Economic Journal*, Vol. 36 (1926), p. 31.

run agriculture is subject to the law of increasing costs.²

e) Fifth, there is less transferability of capital and enterprise. The response to the economic motive is indeed the same throughout the economic field. If a man cannot make a living on a farm, he will leave it; if prices are low, he will plant a different kind of crop, from which he hopes to secure a higher price. Nevertheless, it will take greater fluctuations of profits to bring about a transfer of investments in land than in many forms of industry. Capital, under different conditions, is subject to varying degrees of mobility. On the stock exchange the slightest change of a fraction of a point often means the purchase or the sale of the security in question. At the other extreme is land, where the investment is relatively fixed and where the withdrawal of capital is attended by friction and loss. Moreover, even in land itself, there is a difference between the farmer and the city landowner. The farm is not simply an investment of capital, but a home; and the farmer, even though unprosperous for a time, will hope against hope and live on the chance of a shift in his fortune. He will hesitate to desert his farm until his sons have left home and all hope has vanished.

² For recent studies on this point cf. W. G. Spillman and E. Lang, *The Law of Diminishing Returns*, 1924, and the dissertation of one of my former students, F. Lester Patten, *Diminishing Returns in Agriculture*, 1926.

Even when there is no question of abandoning the farm, the transfer from one kind of crop to another is often difficult. Alternative or substitute crops are not always available or even possible. Certain areas are more suitable for a particular product, and thus engender a specialization the advantages of which may be lost if a shift to other crops is attempted. The desirability of a definite kind of output may be due to climate, location or a dozen other facts. Moreover, the shift may be costly and involve changes in farm organization. These may militate against a reversion to the original crop when prices have again altered. Above all, as we shall see below, the farmer is so constituted that he is more reluctant to make changes. Taking it all in all, the transferability of capital and enterprise is less than in industry.

f) Sixth, the proportion of constant to variable costs seems to be greater. In the great majority of agricultural products the costs which vary directly with the quantity of production are of smaller importance than those which are independent of production. Not only is the overhead greater, but the percentage of the ordinary costs of production that are unaffected by the volume of output is larger. Not a few of the costs of a crop are contracted more than a year in advance.³ Consequently, even when

³ Cf. for an elaboration of this point the work by one of my former students, R. C. Engberg, *Industrial Prosperity and the Farmer*, 1927, pp. 23-28.

prices fall it may not benefit the farmer to curtail production. If a crop can be sold for enough to cover the variable costs or so-called direct charges, that is, the costs which are still optional at the time when the farmer decides how much to plant, the crop is worth raising. In the case of fourteen farms in Ohio, for the years 1911-22, the lowest net returns were obtained after the crisis in 1921. In that year the average cash sales of farm products amounted to \$777 per farm, while the total of all costs, that might possibly have been affected by the volume of production was \$325.⁴ Despite the collapse of prices, therefore, there remained a considerable surplus above the direct costs which was applicable to fixed charges. It paid better to continue and augment production than to reduce output. While high farm prices tend to increase production, low prices do not necessarily tend to decrease it, at least not so immediately as in industry. Agriculture presents the typical problem of overhead costs.⁵

g) Seventh, the individual producer exercises less control over prices. The producer of some particular brand or kind of industrial product is often able to

⁴These included hired labor, repairs and depreciation of machinery, feed, seed and fertilizer, machine work hired, breeding fees, spray materials, twine, fuel and oils. *Year Book of the Department of Agriculture*, 1923.

⁵Cf. J. M. Clark, *Studies in the Economics of Overhead Costs*, 1923, p. 347.

establish a price for the article, especially when he has relatively few competitors. An extensive producer, like the United States Steel Corporation, can sometimes set a price to which the competitors in the trade more or less conform. In agriculture there is no such power. Each of the six million farmers in the United States exerts so infinitesimal an influence on the market conditions of the crop that the maintenance of a price policy is virtually impossible. Whether he produces a little more or less will be inconsequential so far as the price is concerned, however important it may be for him personally. Although there is always a reciprocal influence between production and market conditions, it would be fair to say that in industry the producer generally plays a considerable rôle in affecting the market, while in agriculture the producer is to a far larger extent affected by the market. We find in this fact a confirmation of the conclusion reached in the preceding paragraph, that he will not be so apt to modify his output in the expectation of counteracting a fall in price.

h) Eighth, agriculture responds differently to the influence of the marginal producer. In economic life in general there is, in all commodities subject to the law of competition, a difference between the costs of the individual producers. There are always more or less intelligent, more or less efficient, more or less

avored, more or less lucky producers: at any given time the tendency is for the price of the commodity to adjust itself to the costs of the producer at the margin. Some are always stepping out because their costs are so high as to exceed the price that they can get; some are always coming in because they think that they can produce at so much lower cost as to earn a substantial profit. While the margin is itself always changing according to the conditions of production, there is at any given time a tendency for price to adjust itself to marginal costs.

As a consequence, the submarginal producer, that is, the individual who is below the margin and who cannot meet his expenses, is constantly vanishing and hence exerts only a temporary effect on price. As the submarginal producer disappears, he is replaced by the marginal producer, while the intra-marginal producer, who earns the profits and who is continually able to effect savings and improvements, exerts a predominant influence in reducing the margin itself.

In agriculture the submarginal producer may persist for a relatively long time. Because of the slower tempo in the transferability of labor and capital, the number of submarginal producers may at any time be greater than in ordinary industrial life. The continued existence of these submarginal producers results in a surplus output which is frequently at-

tended by unfortunate consequences. In ordinary industry, where under the modern capitalist system there is always a tendency for production to outrun demand, the equilibrium is quickly restored by the reduction of output and the disappearance of the submarginal producer. The submarginal producer of one commodity, however, is at liberty to start life in another line, where his activities are often attended by success. In agriculture it is more difficult for the submarginal producer of one crop to become the intramarginal producer of another crop. Even when he has become a submarginal producer in general, it is more of a wrench for him to abandon his farm and to seek out new and untried paths. Moreover, even when the submarginal producer has deserted his farm, the land still remains. It is only when the submarginal production is due not to the inefficiency of the individual but to the characteristics of the land itself that the farm is in last resort completely abandoned. In the meantime unfortunate results may have disclosed themselves in farming as a whole.

i) A final difference between agriculture and industry is to be found in the conditions of labor. It is true that there are many industrial producers who are their own workmen or who utilize the aid of their families; just as, on the contrary, there are farmers who employ hired men and who are scarcely

distinguishable from the employers of labor in general. Both of these, however, constitute the exceptions rather than the rule. As over against the typical factory, with its multitude of "hands," the representative farmer is the one who utilizes primarily his own labor and that of his family. The number of hired men, moreover, tends to decrease with the growing use of agricultural machinery. According to the statistics of the crop reporters in the Department of Agriculture, the typical farmer of this character employs on the average only one hired man.

This difference makes agriculture less responsive to the ordinary economic forces that affect the market. If prices rise and he needs to increase his acreage, the farmer can indeed augment his labor force, although not with the same expedition that characterizes the manufacturer. If prices fall, it is not easy for him to reduce his labor costs. He and his family may indeed work fewer hours per day or fewer days per week. If they work less, their appetites may conceivably be a little smaller, and the wear and tear upon their clothes and their tools may undergo some reduction. But in the main the living costs change but little. If prices fall, the farmer finds it difficult to adjust himself to the change; he cannot so easily reduce his outlay for labor supply.

The above points have to do with the costs of phys-

ical output. There remain the costs involved in the disposition or distribution of the commodity. The price that the consumer must pay includes both sets of costs, and the price that the farmer will receive depends upon the relation of total costs to final consumers' price. We come, therefore, to a consideration of the costs of distribution and marketing which constitute a part of the process of production in the larger sense.

2. COSTS OF DISPOSITION

In general it may be said that in agriculture the costs of disposition are relatively greater than in industry. This is due to several facts.

In the first place, the transportation charges are apt to be greater because agricultural products are as a rule heavier and bulkier. A given value of wheat or cotton is more expensive to transport than the same value of pearls. It is true that freight charges are so arranged as to put the cheaper and bulkier goods in the lower classes; but the principle of car space or weight is only partly subordinated to that of value. The contribution to the surplus over the mere hauling expenses made to the overhead or fixed charges by the cheap agricultural products is greater than would be the case if the principle of value or charging what the traffic would bear were consistently and thoroughly applied. The percentage of the

consumers' price ascribable to railroad charges is larger in the case of agricultural than of industrial products.

The second reason for the difference is that agricultural products commonly go through a greater number of intermediate stages. Structural iron is frequently sent direct from the producer to the consumer; a piece of cloth may go from the mill to the factor or wholesaler before reaching the retailer. The typical agricultural product is commonly subject to many more transfers. When the wheat leaves the farm, it is put into the elevator, transported to the marketing center, dealt in by various classes of speculators, delivered to the miller and then handled by the wholesale dealer or a series of dealers, before reaching the retailer. From the retailer the articles of food often pass through the hotels and restaurants before reaching the final consumer.

Each of these successive stages adds its proportion to the cost. The result is that while there is a great variation in separate commodities, both agricultural and industrial, the intermediate or handling charges, in the great majority of food products at least, constitute a more substantial share of the entire cost, with the result, as we shall see below, that the farm price represents a smaller proportion of the consumers' price than in the case of typical industrial products.

In the third place there is far less integration or

systematization. Where each one of millions of producers is thinking in separate terms, there is bound to be almost as much anarchy in disposition as in production. The lack of concerted effort, of centralized activity, of purposeful organization is perhaps the leading characteristic of the American farmer. Whereas modern industry marks the triumph of mass production, of effective consolidation, of economic integration, agriculture is for the most part content with simpler methods and less unity.

Combining these three factors, it is clear that the costs of disposition play a disproportionate rôle in agriculture. A probable corollary of this fact is the relation of the cost per unit to the total quantity. In ordinary industrial products, while the total cost of handling a large amount of goods is greater than that of handling a small amount, the cost per unit is smaller, up to a certain point at least. There would otherwise be no advantage in large-scale operations, and no tendency toward concentration and integration of industry. In agriculture, where the number of the intermediaries is larger and where each of the successive classes seeks to secure the greatest possible profits, thus increasing the margin or spread, it seems to be true that the cost of disposal for a larger quantity is actually more per unit. The significant consequences of this difference will be apparent later.

Having considered the specific differences between

agriculture and industry so far as concerns the conditions of cost — cost of production and cost of disposition — we now proceed to take up the next aspect, the price conditions. For agricultural profits, like all profits, depend upon the margin between cost and price.

3. PRICE CONDITIONS

It is scarcely necessary to recall the principle that while market prices depend upon the relation of supply and demand, normal prices, that is, the point around which market prices oscillate, are in general in a close relation to cost. In other words, prices tend in the long run to adjust themselves to the cost of production. The way in which the situation is brought about is at bottom a simple one. We have to start with a real or potential demand for the commodity in question. Counting on such a demand, the producers will endeavor to create a supply. If the demand turns out to be a fact, the producers can continue to furnish that supply at a certain cost below which, in the long run, the price cannot fall. At this normal price the consumers as a class will decide how much of the commodity they desire in comparison with other commodities at different prices. At any given time the total supply in the market meets the total demand at the given price. If the demand increases, the producer will seek to adjust his supply

to the demand. If the supply increases and the price falls, he will endeavor to decrease production until the readjustment is made. In this constant fluctuation of demand and readjustment of supply, with the corresponding changes in cost according as the production is subject to the law of constant, increasing or diminishing returns, are found the chief elements of price changes. It is this perpetual restoration of an equilibrium between the efforts of the producers and the sacrifices of the consumers that forms the quintessence of all economic activity.

While agriculture is subject to the general laws that govern all price, we find a far greater degree of variability or fluctuation of price than in industry.

Economists have long been familiar with the differences in the degrees of price fluctuation between various kinds of commodities. It has been pointed out that wholesale prices fluctuate more than retail prices; that producers' prices fluctuate more than consumers' prices; that the prices of raw material fluctuate more than the prices of manufactured goods; that unfinished products fluctuate more than finished products; that farm products fluctuate more than mineral products; that farm and animal products taken together fluctuate more than forest and mineral products taken together. Within each category there is of course a distinct variability as regards particular commodities. Economists seek to

present these differences by constructing for each category or article the so-called demand-curve or price supply-curve, in which there is presented a graphical description of the responsiveness of price to changes in demand and supply and of the inter-relations between them.

Inasmuch as the situation which is of peculiar concern in the problem of farm relief is the price which the farmer secures for his product, the greater variability of farm prices is a result of the combination of all the preceding differences. The farm price is a wholesale price, not a retail price; it is a producers' price and not a consumers' price; it is the price of a raw material and not of a finished product; it is a price of vegetable and animal products and not of forest and mineral products.

While the truth of the general principle is nowadays accepted, only slight progress has been made in the more exact determination of the facts and only a beginning is noticeable in the explanation of the facts. Progress has been delayed by the controversies, not yet completely settled, as to the best mathematical methods and their limitations.⁶ The

⁶ Illustrations of the more general principles are found in the books of two of my colleagues: W. C. Mitchell, *Business Cycles*, 1913; and F. C. Mills, *The Behavior of Prices*, 1927. Among the best discussions of theory are books of another colleague, Moore, and of a former student, Schultz. H. L. Moore's chief contributions are found in his *Economic Cycles: Their Law and Cause*, 1914; *Generat-*

problem is nevertheless one of great importance.

There are several reasons for the extreme variability of farm prices. These may be summed up as follows:

a) Agricultural output is less amenable to the efforts of the producer.

b) Demand is more persistent than supply.

ing Economic Cycles, 1923; and "Elasticity of Demand and Flexibility of Prices" in *Journal of the American Statistical Association*, Vol. XVIII (1922), p. 14. H. L. Schultz's chief contributions are: "The Statistical Measurement of the Demand for Beef" in *Journal of Farm Economics*, Vol. VI (1924), p. 254; and *Statistical Laws of Demand and Supply, with Special Application to Sugar*, 1928.

Many other studies have been made by the statistical experts in the Department of Agriculture and the various agricultural colleges and experiment stations. Among the more notable are Haas and Ezekiel, *Factors Affecting the Price of Hogs*, Bulletin No. 1440, 1926; B. B. Smith, *Factors Affecting the Price of Cotton*, Technical Bulletin No. 50, 1928; H. B. Killough (another former student), *What Makes the Price of Oats*, Department Bulletin No. 1351, 1925; H. Working, *Factors Determining the Price of Potatoes* in Minnesota Agricultural Experiment Station Bulletin No. 10, 1922; H. A. Wallace, "Forecasting Corn and Hog Prices" in *The Problem of Business Forecasting*, Pollak Foundation, 1924; and L. H. Bean, *Some Interrelations between the Supply, Price and Consumption of Cotton*, 1928.

Convenient bibliographies will be found in Engberg, *op. cit.*, Appendix B; Holbrook Working, "The Statistical Determination of Demand Curves," *Quarterly Journal of Economics*, Vol. XXIX (1925), p. 539; and on pp. 120-24 of the work mentioned in the next paragraph.

An interesting attempt to interpret the facts is the recent work of G. F. Warren and F. A. Pearson, *Interrelationships of Supply and Price*, published by the Cornell University Agricultural Experiment Station, Ithaca, N. Y., 1928. As to the reservations to be attached to some of their conclusions, see *infra*, pp. 67, 83.

c) An undersupply produces a greater effect on price than an oversupply.

d) The economic lag delays the reestablishment of the price equilibrium.

e) The spread between retail, wholesale and farm prices is increased by the costs of disposition.

f) The distinction between shortage and surplus areas is more marked.

g) The influence of modern economic changes on methods of distribution and consumption is especially noticeable.

h) The effect of falling prices in producing a still greater spread between farm prices and consumer prices is accentuated.

i) The relation of the price per unit to the total value of the product is more intimate.

a) AGRICULTURAL OUTPUT IS LESS AMENABLE
TO THE EFFORTS OF THE PRODUCER

The outstanding fact in agriculture is its dependence upon the fortunes of nature. This has been mentioned above and will be discussed more in detail below.⁷ In industry it is easy for the producer to determine how great or small his production is to be. Within the limitations of capital, labor and the supply of the raw materials, he can vary his output as he likes. In agriculture also he can in the long run influence the crop by altering his acreage or chang-

⁷ Cf. *supra*, p. 43 and *infra*, p. 147.

ing the productivity per acre. But in the short run, that is, from year to year, the conditions which determine the supply and therefore the price are largely beyond his control.

Among the striking recent variations in output may be mentioned: cotton, 7,954,000 bales in 1921 and 17,977,000 bales in 1926; corn, 3,054 million bushels in 1923 and 2,309 millions in 1924; beet sugar, 1,350,000 tons in 1922 and 2,180,000 in 1925; rice, 903 million pounds in 1924 and 1,159 millions in 1926; potatoes, 26 $\frac{1}{4}$ million bushels in 1923 and 40 $\frac{1}{4}$ millions in 1924.⁸

The variation in the size of the annual crop depends far more on the yield per acre than on the amount of acreage. Of the total variations in the production of corn from year to year during the period 1905-25, 85 percent was due to differences in yield per acre and only 15 percent to the amount of acreage. The percentage of the variation due to the yield per acre in other crops was as follows: cotton, 60; oats, 63; tame hay, 47; winter wheat, 17; spring wheat, 95.⁹

These general relations have been subjected to more detailed analysis in some recent statistical studies, which attempt to ascertain the variation in production, and to distinguish between acreage and

⁸ *Statistical Abstract of the United States*, 1928.

⁹ W. M. Jardine (Secretary of Agriculture), *Stabilizing Farm Prices*. Reprint from *The Farm Journal*, 1927, p. 4.

yield per acre. This disparity is shown in the following table:¹⁰

COEFFICIENTS OF VARIATION *		
<i>Crop</i>	<i>Yield</i> (<i>Percent</i>)	<i>Acreage</i>
Corn -----	18.54	5.14
Oats -----	18.38	3.85
Cotton -----	14.60	9.03
Barley -----	14.77	6.84
Potatoes -----	24.36	5.94
Hay -----	10.41	4.13

* Coefficients of variation of percentage changes from year to year. The coefficient of variation (the percentage which the standard deviation is of the mean) is a measure of the degree of instability of the series. If the standard deviation (the square root of the average of the squares of the deviation from the mean of the series) is equal to the mean, the coefficient of variation is 100%.

It would indeed be inexact to ascribe the variations of yield entirely to nature, and those of acreage entirely to man. The variations in yield are due partly to mechanization and to greater intelligence or care. On the other hand the variations in acreage are sometimes due in part to nature. The weather around planting time, the prospects of climatic change or the existence of plant insects may materially influence the farmer's decision as to the acreage which he plants. In fact the proportion of variations in acreage due to nature is greater than that of variations in yield due to man. The consequence is that on the whole the influence of nature on output and price is considerably more important

¹⁰ Engberg, *op. cit.*, p. 42.

than that of man. Finally it is to be noted that the variations apply not only to the size, but to the quality of the crop. The crop may be just as large, but of such a poor quality as to command a lower price. With the relative inability of the farmer to counteract the fickleness of nature, it is clear that the variability of price is pronounced.

b) DEMAND IS MORE PERSISTENT THAN SUPPLY

Demand for agricultural products is less elastic than in industry. This is true not only in the sense that demand does not respond quite so quickly to changes in price, but also in the sense that changes in demand do not occur to the same extent, or are relatively unimportant. In the case of a large proportion of manufactured products, demand is sensitive and variable. It depends upon the hierarchy of wants, the possibility of substitutes, changes in fashion and a thousand other causes. These not only induce demand to respond sharply to changes in price but are often the motor influences in causing alterations in price, at least until supply has been adjusted to the new demand.

In agricultural products the situation is different. A distinction must indeed be drawn between food and tobacco, on the one hand, and other products. In things like cotton, wool, flax, etc., which are used as the raw materials of industry, the demand is more analogous to that for the industrial products them-

selves. In food and tobacco, however, we are dealing largely with necessities of life or conventional necessities. Changes in the prices of things that people are accustomed to use exert relatively little influence on demand. The demand for articles that satisfy recurrent wants is highly inelastic, sometimes even absolutely inelastic, and is apt to be virtually discontinuous. This conclusion is conspicuously true, on the whole, of foods.¹¹ If prices fall, people will not eat more, even though they may be likely to consume relatively more of the foods whose prices have decreased most. If prices rise, the consumer will be more apt to buy fewer comforts and luxuries in the shape of finished industrial goods rather than to diminish his consumption of food.

This is particularly true in the United States where the standard of life is high and where the proportion of the individual's outlay for food to his total expenditures is relatively small. In some of the foreign countries with a low standard of life and where a larger percentage of a man's income is spent upon food, a rise in food prices will exert a more potent influence on the demand than in a country like the United States where the range of expenditure is wider and a greater proportion of the individual income is spent upon comforts and luxuries.¹²

¹¹ Cf. J. W. Angell, "Consumer Demand," *Quarterly Journal of Economics*, Vol. XXXIX (1925), p. 589.

¹² For a good study as to the influence of changing prices and

On the other hand, conditions of supply in agriculture are more variable, largely for the reason that production, as we have seen, is to a greater degree independent of the volition of the producer. A bumper crop may come when least expected; the fondest hopes of a bountiful output may be dashed to the ground by drought, storm or disease. While the demand remains fairly stable, the supply is highly variable.

This is especially important in a period of low or falling prices. In ordinary commodities a fall in prices, due to increase of supply, tends to augment the demand and thus to hinder a still further depression. In agricultural products the fall in prices due to a larger supply is not to the same extent followed by an increase of demand, and is therefore not so strongly counteracted in its range or intensity.

c) AN UNDERSUPPLY CAUSES A GREATER EFFECT
ON PRICE THAN AN OVERSUPPLY

It might be supposed that a halving of the supply of a commodity would result in a doubling of the price, or that a doubling of the supply would result in a halving of the price. This assumes, however, a regular responsiveness of demand to changes in

changing income on the outlay for various kinds of food groups, see Emma A. Winslow, "Contributions from Budget Studies to the Construction of a Statistical Index of the Purchasing Power of Consumers in the United States" in Berridge, Winslow and Flinn, *Purchasing Power of the Consumer*, 1925.

price which is nonexistent in general, and the absence of which is specially marked in agricultural products. Indeed, ever since the time of Gregory King in the seventeenth century, economists have been struggling with this problem.

As a matter of fact, abundance and scarcity do not exert the same influence on price. Scarcity exercises a more pronounced effect on price than abundance. A relative undersupply will cause a greater rise in price than a relative oversupply will cause a fall in price. This is due to the psychological factors connected with satiety. When we have too much of anything we are apt, temporarily at least, to lose our interest in it; but when we have too little of anything, we are likely to become apprehensive and sometimes even panic-stricken and are ready to work harder to get it. The nearer a commodity approaches the character of a necessity, the more marked is this result. A shortage causes a greater departure from normal price than a surplus. This phenomenon, moreover, is especially noticeable in the case of the more perishable food products.

Recent calculations have shown that if we take the series of years from 1921 to 1926, an oversupply of 20 percent above the normal output in the case of potatoes decreased retail prices in New York by 21 percent; while an undersupply of 20 percent below normal increased retail prices by 68 percent. In the

case of corn, during the years 1895-1913, a 20 percent oversupply reduced December cash prices 24 percent below normal, while an undersupply of 20 percent increased prices by 39 percent. In the case of wheat, from 1899 to 1913, a 20 percent crop above normal of northern spring wheat reduced prices at Minneapolis 22 percent; while a crop of 20 percent below normal during the same years increased the price 35 percent. In the case of cattle, during the years 1890-1914, receipts of 20 percent above normal reduced the price of fat cows and heifers at Chicago 24 percent, but receipts of 20 percent below normal increased prices by 40 percent.¹³

¹³ For the calculations on which these figures are based, see Warren and Pearson, *op. cit.*, pages 12, 42, 54, 83. It must be pointed out, however, that all these figures used by Warren and Pearson are only approximate. The statistical analyses used are of the elementary gross correlation type, which do not take into account the presence of other variables that may give quite different curves representing the relationships between supply and price. Judging from the scattered diagrams published through this work, and the average curves drawn through them, there is apparently room for considerably different results if more exact methods of price analysis were used. Even one of the best of these results, shown on the front page of the bulletin, gives a wide variation in the answer to the simple question: "What change in price is normally associated with a 20 percent increase in supply?" From the published curve, the answer is, "A decline of about 40 percent." But the answer based on the observations shown for 1901-5 would be about 30 percent, and on the observations for the period 1905-8 about 50 percent. These different answers represent a range in elasticity from less than .40 to more than .67.

It may be noted that the above criticisms are shared by Mr. L. H.

Just as in the human being good health is the normal condition and illness, which saps his strength, the exception, so in agriculture flood, fire, animal pests and disease may be regarded as the abnormal events which operate to reduce the crop. Since this abnormality is more common than in industry, and since the effect of the undersupply on the price is more marked, it is clear that the range in the variations is greater.

d) THE ECONOMIC LAG DELAYS THE RE-ESTABLISHMENT OF THE PRICE EQUILIBRIUM

The economic lag¹⁴ is the period which elapses between the incurring of the costs of production and the receipt of the proceeds. In agriculture the lag is due not only to what is called the gestation period, but also to the time needed for preparation.

The gestation period is sometimes protracted. In cattle, three years at least are needed sensibly to increase the production; in rubber, five years; in certain fruits and other products, even longer. While many of the ordinary crops are annual, it must be remembered that, as in the case of wheat, the economic lag includes the outlay for preparing the

Bean, who was indeed the first to call my attention to them. Despite these objections, however, the calculations of Messrs. Warren and Pearson represent much valuable pioneer work, and may be provisionally accepted as fairly defensible.

¹⁴ The term is sometimes employed in a slightly different sense in the theory of statistics.

seed bed, some of which, like the outlay for manure, may be anterior to the time of actual sowing. As the outlays are not continuous but irregular, a more exact consideration of the economic lag involves a weighting of the various items of expenditure according to the time when each cost is incurred as compared to the time of actual marketing.¹⁵

The economic lag in agriculture is accordingly more protracted than in industry. Its influence is seen in the fact that when prices change, costs are incurred at one level and returns are received at a different level. Where there is little or no economic lag, production will quickly adapt itself to price changes and the intensity of the fluctuation is correspondingly reduced. In agriculture the extreme of the price variation is susceptible of correction with much greater difficulty. The farmer must make his decision as to the increase or the curtailment of his output months or even years before the crop is marketed.¹⁶

In industry a slump in the market is apt to be quickly counteracted by a partial or a complete shut-down. In agriculture it may be several years before a change of market price will exert any effect on the

¹⁵ This weighting for various crops has been attempted by C. D. Whetham, "The Economic Lag of Agriculture" in *The Economic Journal*, Vol. XXXV (1925), p. 537.

¹⁶ Cf. John D. Black, "Elasticity of Supply of Farm Products" in *Journal of Farm Economics*, Vol. VI (1924), p. 15.

supply and therefore on the normal price. Moreover, by the time the readjustment in the cost of production has taken place, there may supervene another sudden change in supply for which no one is responsible and which will cause another violent oscillation of price. Industry may be likened to an expanse of water where the gentle winds of demand and supply produce an agreeably diversified surface that occasionally gives way to a glassy calm; agriculture is like the same sea agitated by violent winds where huge waves never disappear and where navigation becomes correspondingly difficult.

In other words, while in agriculture, as everywhere else, high prices will in the long run lead to greater production and low prices to smaller production, the adjustment is slower and more difficult. The disparity between market and normal prices is therefore likely to last longer. Price variation in agriculture is not only more extreme but more protracted than in industry.

The agricultural lag is largely responsible for what are known as crop cycles — that is, alternations of high and low prices which are to be distinguished from the cycles which affect all business activity in general. The crop cycles are due to the fact that a considerable period intervenes between the cause and the effect. If prices rise, for instance, and tempt the producer to increase his supply, the effects

may begin at once but the results do not ensue until after an interval. He may intend, for instance, to devote more of his energy to raising cattle, but between the time of his decision and the period when the calves have grown into steers fit for marketing, several years may intervene. In the same way low prices which may tempt him to reduce his output will not exert their effect immediately, although it is naturally easier to slaughter the present supply of calves and steers than to furnish an addition to the supply.

The alternation of low and high prices is indeed affected by other factors than the changes in supply, so that we can not speak of an absolute regularity of the crop cycle. But in the main the cycle can be predicated with fair success. In the strictly farm products the cycle is most pronounced in cotton and hogs. In the case of hogs, however, the situation is complicated by the supply and the price of corn, which react not only on the number of hogs raised but on their weight when marketed.¹⁷ The cotton cycle is about two years, and the same is true of cabbages. In eggs the cycle is a little longer, and in fruits, like apples, peaches, pears and plums, still longer.¹⁸ The longest of all the cycles is found in

¹⁷ Cf. Sewall Wright, *Corn and Hog Correlations*, Department of Agriculture, Bulletin No. 1300, 1925; and R. C. Engberg, *op. cit.*, Chap. VIII.

¹⁸ Cf. R. B. Corbett, "Some Trends in the Number of Fruit Trees," *Farm Economics*, Cornell University, August, 1925.

cattle and horses, where the interval from the depth to the height of the price waves varies around a decade.¹⁹

The following table ²⁰ shows various cycles, or rather, half cycles:

Commodity	Number of years included	Average period from low to high or high to low	Length of period from low to high or high to low	Percentage of change in last half cycle
Horses-----	46	11 years	10-14 years	— 64
Beef cattle --	48	8 years	6-10 years	— 55
Sheep -----	49	4.5 years	3- 6 years	+ 72
Eggs -----	51	4.5 years	3- 6 years	+ 10
Hogs -----	63	32 months	15-65 months	— 41

These crop cycles are sometimes concomitant with, sometimes in inverse relation to, the price changes caused by the longer swings or by the exceptional cataclysms which will be discussed below. In the United States, it so happens that the year 1928 marks the upgrade of the cattle cycle, while depression still reigns in the more specific farm crops.

e) THE SPREAD BETWEEN RETAIL, WHOLESALE AND FARM PRICES IS INCREASED BY THE COSTS OF DISPOSITION

We come in the next place to the spread between wholesale and retail prices and to the still greater

¹⁹ Cf. in Armour's *Monthly Letter to Animal Husbandmen*, 1925, the following: "Cyclical Trends in the Sheep Industry" (March); "Cycles in the Swine Industry" (June); "Cycles in the Cattle Industry" (September); and "Cycles in the Sheep Industry" (October).

²⁰ *Farm Economics*, Cornell University, Feb. 6, 1926, p. 387. Data

spread between producer and wholesale prices in agriculture. The disparity, in other words, between farm prices and consumer prices is the most pronounced; for every variation in prices to the consumer due to changes in demand or supply, there is a greater variation in farm prices.

So far as concerns the spread between retail and wholesale prices, some interest attaches to the following figures. If we take potatoes, we find that during the period from 1895 to 1915, while a 20 percent oversupply caused a fall of retail prices in New York City of 5 percent, and a 20 percent undersupply caused a rise in retail prices of 6 percent, the corresponding figures for wholesale prices were a 23 percent fall in price and a 38 percent rise in price. In the case of cattle, during the period 1890-1914, receipts of cattle of 20 percent above normal led to a fall in the price of canner and cutter cows at Chicago of 37 percent, while receipts of 28 percent below normal led to an increase of price of 78 percent. On the other hand, retail prices of round steak, respectively, were only 11 percent less or 15 percent more.

Still more striking is the spread between wholesale and farm prices. In potatoes, the wholesale price, as we have seen, fell or rose 23 percent and for subsequent periods are found *ibid.*, pp. 642, 659, 819 and 823. A somewhat different series of cycles is being worked out for Professor W. C. Mitchell by our former student, Dr. S. S. Kuznets, the author of *Cyclical Fluctuations, Retail and Wholesale Trade*, 1926.

38 percent, and the farm price at Batavia, New York, fell and rose respectively 30 percent and 54 percent. In the case of cabbages, during the period 1919-25, when a crop of 20 percent above normal reduced the wholesale prices in New York 32 percent, and a crop 20 percent below normal increased wholesale prices 61 percent, the farm prices at Little York, Cortland County, N. Y., fell and rose respectively 39 percent and 82 percent. In the case of corn, during the period from 1877 to 1913, whereas an oversupply and an undersupply of 20 percent led in the wholesale prices of No. 2 cash at Chicago to a fall of 17 percent and a rise of 26 percent respectively, the farm prices in Iowa rose 25 percent and fell 42 percent respectively. In the case of cattle, during the period 1890-1914, whereas the prices of heavy steers in Chicago fell 12 percent and rose 17 percent according as there was a 20 percent oversupply or 20 percent undersupply, the farm prices in Nebraska fell 28 percent and rose 50 percent respectively.²¹

The explanation of the greater variation of wholesale prices and the still greater variation of farm prices is fairly simple when we consider the influence in the one case of handling charges, and in the other of transportation rates.

Let us take first the spread between retail and

²¹ For these figures, compare Warren and Pearson, *op. cit.*, pages 9, 34, 86, 83.

wholesale charges and consider what happens if retail prices of food products fall because of an oversupply. If the retail price per unit falls, the commission dealer or the other intermediary who buys at wholesale will find that his commission per unit is lower. But as his overhead or constant expenses do not fall with the lower prices, his total costs will not fall to a corresponding extent. The consequence is that while the commission per unit will fall, it will not fall quite in proportion nor to the same extent as if the fall in retail price were due to a lower demand rather than to a greater supply. Assuming that the retail price falls from one dollar to eighty cents, the net result can be put in the following hypothetical figures:

Retail price per unit	Handling charges per unit	Wholesale price per unit
\$1.00	\$0.50	\$0.50
.80	.45	.35
<hr/>		<hr/>
\$0.20		\$0.15
-20%		-30%

In other words, if the retail price falls 20 cents, the commission merchant's charges per unit will fall not to 40 cents but only to 45 cents, with the result that the wholesale price will fall to 35 cents. That is to say, whereas the retail price has fallen 20 percent, the wholesale price has fallen 30 percent.

Let us now take the contrary supposition, namely,

where retail prices rise because of an undersupply. An undersupply, as we have seen, produces a greater effect than an oversupply. The handling charges per unit will of course rise with the smaller quantity, but the existence of the overhead will again prevent a proportionate rise. Assuming that the retail price rises from a dollar to \$1.30, we should accordingly have figures about like the following:

Retail price per unit	Handling charges per unit	Wholesale price per unit
\$1.00	\$0.50	\$0.50
1.30	.60	.70
<hr/>		<hr/>
\$0.30		\$0.20
+30%		+40%

That is to say, if retail prices per unit rise 30 cents because of an undersupply, the charges of handling will indeed be greater per unit; but instead of rising to 65 cents, will rise only to 60 cents. In consequence, the wholesale price will rise from 50 to 70 cents, representing a 40% increase.

In other words, where retail prices fall 20 percent or rise 30 percent, respectively, wholesale prices will fall 30 percent or rise 40 percent, respectively. The spread therefore is greater in the case of the wholesale prices.

When we come finally to the spread between wholesale prices and farm prices, we find the disparity still more pronounced, because a large item in the spread between wholesale prices and farm prices

consists in the cost of transportation. Railroad rates now are virtually fixed by the Interstate Commerce Commission and do not vary from month to month according to prices of commodities. In the long run, freight charges will be raised or lowered in accordance with definite principles of rate fixing; but these changes are infrequent and are made only at relatively long intervals. In any given season, or even from year to year, they may be considered fairly stable. The results can be portrayed as follows:

If we start with a wholesale price per unit of one dollar and assume for the sake of simplicity that half of this represents the fairly constant cost of transportation, we have the following figures in case of an oversupply:

Wholesale price per unit	Freight charges per unit	Farm price per unit
\$1.00	\$0.50	\$0.50
.80	.50	.30
<hr/>		<hr/>
\$0.20		\$0.20
-20%		-40%

On the other hand, if wholesale prices are greater because of the undersupply, the situation will be as follows:

Wholesale price per unit	Freight charges per unit	Farm price per unit
\$1.00	\$0.50	\$0.50
1.30	.50	.80
<hr/>		<hr/>
\$0.30		\$0.30
+30%		+60%

In other words, whereas wholesale prices would fall 20 percent or rise 30 percent, respectively, farm prices would fall 40 percent or rise 60 percent, respectively.

By adding the spread between retail and wholesale prices to the spread between wholesale and farm prices, we see that the variability of farm prices is considerably greater than that of retail prices.

f) THE DISTINCTION BETWEEN SHORTAGE AND
SURPLUS AREAS

The contrast between areas of surplus production and those of shortage or deficit production is indeed characteristic of all modern life. It is, however, more pronounced in agriculture than in industry. Geography, topography, weather and climate play a rôle in the location of industry, but they are of minor consequence as compared to agriculture. There is a tendency for each area or locality to devote itself to the production of the crop for which it is best fitted, while the favorable market may be situated at a distance. In such cases we find areas in which more is produced than can there be consumed; and on the other hand, we find areas where little or nothing of that commodity is produced, because it pays better to procure it from a distance. Farm prices in surplus areas, however, are more variable than farm prices in shortage areas. This is due to the fact, of which cognizance

has been taken above, of the relatively important influence upon prices exerted by the cost of disposition. If retail prices to the consumer fall, for instance, because of an increase in the supply, the farmer in the shortage area suffers less than the farmer in the surplus area. If he raises a particular product in quantities insufficient to satisfy the local demand, it will be brought in from the outside and the price to the consumer must include the transportation and handling charges. The local farmer will of course get the same price from the consumer, but with the difference that the farm price is much closer to the consumer price, and falls with it.

This situation can be illustrated by actual examples. From the figures mentioned above in the case of potatoes, we saw that the price at Batavia, N.Y., fluctuated more than in the country as a whole. Batavia itself does not represent an exclusively surplus area, because of the proximity of large cities; but the principle is plain. Still clearer is the situation in hay. New York is on the whole a surplus area for hay, notwithstanding a deficit in the southeastern sections. On the other hand, Georgia and Rhode Island are distinctly shortage areas for hay. If we compare hay prices for the period 1875-1913, we find that a crop of 20 percent below normal sold for 23 percent above normal on New York farms, but for only 3 percent above normal on Georgia farms. In

the same way, a crop of 20 percent above normal led to a fall of prices on New York farms of 16 percent, but to a fall of only 7 percent in Rhode Island and of 3 percent on Georgia farms.²²

g) THE INFLUENCE OF MODERN
ECONOMIC CHANGES

We come in the next place to a point that has recently been stressed, namely, the influence of modern economic changes in methods of distribution and consumption on the increasing variability of farm prices. It is contended that a given fluctuation in the consumer price, due to market conditions, reflects itself back into a more pronounced fluctuation in farm prices. The argument would be somewhat like the following.

The changes are found all along the line from production to final consumption. On the farms themselves there has been a growing specialization, an increased commercialization and a more pronounced mechanization. When the farmer consumed most of what he grew, he could use a crop surplus on his own farm whenever prices became more or less unsatisfactory. With a relatively small excess, the fluctuations in the supply reaching the market were insignificant and the disparity in the oscillations of price was consequently slight. But since nowadays virtually the whole of the produce is sold, not only are

²² Warren and Pearson, *op. cit.*, p. 26.

the effects of oversupply and undersupply more pronounced, but in addition little of the product reaches the consumer at the low farm price. In the handling and disposition of the products there have been marked changes which reduce the fluctuations of price to the consumer without affecting the fluctuations of price to the producer, so that the spread becomes greater. The consequence is that when fluctuations occur in consumers' prices there are still greater fluctuations in producers' prices. We have more processed goods; more package goods; more canned goods, of every class and description. Fruits and vegetables may be pickled, dried, preserved or canned. Meats of certain kinds may be cured and held in dry storage. Milk may be condensed, evaporated or powdered. Eggs may be put in cold storage.

All these processes tend to make consumers' prices more stable.²³ Food products are sold by the mail-order houses and by the chain stores. Finally, not only have the large cities been growing faster than the small towns, but in the cities themselves many more people live under conditions that encourage the taking of meals in restaurants where prices fluctuate very little.²⁴ Moreover, when most people lived in villages they were apt to buy directly from the farmer, so that the consumers' price fluctuated very little.

²³ As to the influences of processing, see Engberg, *op. cit.*, p. 72.

²⁴ Warren and Pearson, *op. cit.*, pp. 16, 17, 18.

tuated about as much as the farm price and there was little disparity in the relative variations. At present, when most people live in cities, the situation is different. Even if people do not live in cities, they now, owing to the growth of farm specialization, live at a considerable distance from the home base. While the costs of production are being reduced, the costs of distribution are growing larger.

Every change of this kind, it is contended, increases the spread between retail and farm prices. Every fluctuation in the final consumer-price due to the oversupply or undersupply of food products is reflected back with increased intensity to the farm. While fluctuations have always been the law of the farm, the fluctuations are more pronounced today precisely because of the progress that the farmer has made.

Illustrations of the above statements are also adduced. We shall content ourselves with calling attention to the spread in prices between raw products and processed products. In the case of apples, for example, during the years 1913-25, in a township in Niagara County, New York, an oversupply of 20 percent and an undersupply of 20 percent led to a price increase of 9 percent and a price decrease of 12 percent in the case of eating apples; whereas the figures for cider apples were 15 percent fall and 22 percent rise, respectively. Similar variations are found in the case of potatoes, where the prices of

manufacturing potatoes fluctuated considerably more than did the prices of eating potatoes.²⁵

The above contention, while interesting and plausible, must however be accepted with some reservations. These are both general and special.

In the figures adduced, conditions prevailing during the years 1915-20 and 1921-25 (or 1926) are compared with those prevailing during the decade or two before the War, and on the basis of this comparison certain conclusions are drawn and definite secular tendencies are predicated. As a matter of fact, however, each of the years from 1915 to 1920 was exceptional owing to war conditions, and the first year, at least, of the period 1921-25 was almost equally abnormal.

Moreover, the conclusions in not a few cases are based upon mathematical curves fitted to an entirely insufficient number of observations. While the foundations for the conclusions in the earlier periods are broad and ample, some of the conclusions for the period 1915-20 are based on only six observations, and some of those for 1921-25 on only five observations. Moreover, in the potato figures mentioned on the following pages one of the five observations appears to be quite exceptional. If this one case were eliminated, quite different results would be secured. A curve fitted to five points affords a rather insecure basis for a generalization.

²⁵ *Op. cit.*, pp. 12, 31.

The inadequacy of the proof thus renders the principle advanced in this section, to say the least, open to question. The variability of farm prices indeed increased during the War, and this increased variability persisted after the War. But the same phenomenon is observable in non-agricultural prices as well. Before the War the wholesale prices in both agriculture and industry showed a declining variability, and it has at all events not yet been proved that the same tendency is not found in farm prices. During and after the War there was a tremendous increase in the variability of all prices, so that it is not yet certain whether farm prices differ in this respect from others, and whether the difference, if found to exist, is due in any great degree to changes in modern methods of distribution and consumption. The best that can be said of the contention is that while it seems probable, it still has to be verified. It cannot be definitely accepted until we have a much more elaborate substructure of price statistics in general.²⁶

b) THE EFFECT OF THE FALLING PRICE LEVEL

Less in need of verification, in the next place, than the preceding consideration is the relative influence

²⁶ The above conclusions are confirmed by my colleague, Professor F. C. Mills, who was indeed the first to call my attention to the insecure foundations of the broad generalization advanced by Messrs. Warren and Pearson.

of inflation and deflation, that is, of rising or falling prices, upon the situation. This is of special significance at the present time in the United States, where we have to deal with the results of the decline from the high level of War prices.

The facts can be illustrated by taking the three periods, before, during, and after the War. The figures for the United States potato crop are as follows:

Period	Crop 20% below normal	Crop 20% above normal
	—	—
	Percent that prices were above normal	Percent that prices were below normal
Farm prices, United States, 1895-1915---	35	22
Farm prices, United States, 1915-1920---	24	16
Farm prices, United States, 1921-1925---	116	47

The same tendency may be illustrated in the case of corn, where the effects of inflation and deflation are shown in the relation of the Iowa farm prices on December 1 to the size of the entire United States corn crop:²⁷

Period	Crop 20% below normal	Crop 20% above normal
	—	—
	Percent that prices were above normal	Percent that prices were below normal
1877-1894 -----	30	19
1895-1913 -----	57	31
1915-1920 -----	51	28
1921-1925 -----	93	41

²⁷ *Op. cit.*, pp. 14, 42.

In other words, the effects of inflation and deflation are very different. When a general rise of prices takes place, there is a lag in the increase in the rate of wages and in the increase of freight charges, with the consequence that the transportation and handling charges remain comparatively inflexible. The fluctuations in farm prices are then somewhat less than they would otherwise be. But if a pronounced fall in prices or deflation takes place, the sums that the farmers receive for their products constitute such a small percentage of the retail price that a comparatively slight change in retail price due to alterations in the supply brings about a far greater fluctuation in farm price. In a period of deflation the farmer is always harder hit than he is benefited in a period of inflation. While this is more or less true of all economic life, it is especially marked in the case of agriculture.

i) THE RELATION TO TOTAL VALUE

We come, finally, to the relation of the price per unit to the total value of the product. This is a matter of the greatest importance to the farmer. What interests him is not so much the price per unit as the total value of his crop as compared to his total costs. If he can produce more, it is possible that his greater output will more than compensate for the lower price per unit, so that his gross returns will be greater;

and if he can cut down his costs, his net profits will be still larger. The paramount question for him is how much his total crop will yield.

Whether his gross proceeds will be greater despite a fall in prices depends primarily upon the degree to which prices fall. It hence becomes of the first importance to ascertain what is the combined effect of changes in price and changes in supply upon the total value of the crop.

It is here that we encounter some noteworthy facts. It is perhaps to be expected that, owing to the great influence of undersupply on the price per unit, the total value of a small crop should be larger. But it is disconcerting to learn not only that a larger crop will mean a smaller total value, but that, if reliance can be put upon the alleged figures, the same degree of oversupply means, in recent decades, a continually smaller total value. Let us give some illustrations.

In the case of potatoes, if we take the farm prices at Batavia and compare them with the total crop of potatoes in the United States, we find the following situation:

Period	Value of crop 20% below normal	Value of normal crop	Value of crop 20% above normal
1897-1915-----	123	100	84
1915-1920-----	175	100	64
1921-1925-----	222	100	53

In other words, whereas in the earlier period a crop one-fifth larger represented a total value about one-sixth smaller, in the most recent period a crop one-fifth larger represents a total value almost three-sixths (or one-half) smaller.

In the case of corn, if we take the December farm prices in Iowa and compare them with the total production of corn in the United States, we find the following facts:

Period	Value of crop 20% below normal	Value of normal crop	Value of crop 20% above normal
1877-1894-----	104	100	97
1895-1913-----	126	100	83
1915-1920-----	121	100	86
1921-1926-----	154	100	71

In other words, the more recent the period, the greater will be the fall in the total value of the crop as a result of the same increase of the output.

In the case of hogs, in the period from 1877 to 1913, a 50 percent increase in the supply added only 5 percent to the receipts at the central market. If we take out the freight rates and other fixed charges, the farmers received much less for 120 hogs than for 80 hogs. The consumers paid 34 percent more for 50 percent additional hogs, although the farmers received less.²⁸

The significance of the above figures, if and when they are confirmed by fuller investigation, is profound. As a result of the modern development, the

²⁸ *Op. cit.*, pp. 18, 45, 73. But note the reservations *supra*, p. 83.

farmer is often in an unfortunate position. While he must indeed expect that the larger the output of himself and his neighbors, the lower will be the price per unit, yet if the crop is inordinately large, it will lead to such a great fall in price that the total gross returns of the entire crop will be less than the returns of a smaller crop. In industry the period of production is so short and the possibility of adjusting the supply to the demand is so great that such a situation is highly exceptional; in agriculture, for the reasons that have just been adduced, we are confronted by the tragic fact that the harder a class of producers work and the more they turn out, the worse their condition may be.

We see, therefore, the growing importance that is to be ascribed to the effect of a surplus or oversupply. Nevertheless, a surplus of agricultural production seems to be even more needed than a surplus of labor supply in ordinary industry. A community that desires to be self-dependent, in large measure at least, can scarcely get along without a surplus. The variations in agricultural output, due to the uncertainties of natural conditions such as weather and disease, are often as much as 20 percent of the total output of the various crops. If a community desires to be reasonably self-dependent and to rely upon its own output for food supply, it must therefore face the prospect in any one year of having a surplus production of at least 20 percent. For in a bad year

there would only be just enough to go around. What to do with the surplus, however, in a good year, and how to prevent it from demoralizing prices to the producer, becomes a factor of the first magnitude, especially under modern conditions, where we frequently have to reckon with a world surplus in addition to a domestic surplus, and when as a consequence the dangerous effects of a surplus upon the prosperity of the farmer become aggravated.

Our conclusion from the above discussion is that not only are the fluctuations in agricultural prices more pronounced than in industry, but that the recent developments in the agricultural situation have increased the disparity. The rapid development of agriculture itself, the changes in economic life and the advent of a period of falling prices have conspired to accentuate the difficulties of the modern farmer. Whether these difficulties are permanent or only transient, they undoubtedly exist at present.

Having dealt with the specific characteristics of agriculture with reference to the costs of production and of disposition as well as to prices, we now proceed in the next place to consider the more general differences.

4. THE GENERAL CONTRASTS WITH INDUSTRY

Some of these are differences in degree; some constitute differences in kind. Of the former class per-

haps the most striking characteristic of the farmer, and especially of the American farmer, is his outstanding individualism. In one sense, indeed, the entire modern age is the age of individualism. In industry and commerce, however, individuals have long since learned the advantages of association and combination. The most obvious illustration of this fact is the modern corporation; business life is coming more and more to be corporate life. Furthermore, the recent tendency of industry and commerce has been on the one hand toward specialization and on the other hand toward integration, with its modern accompaniments of pools, trusts, holding companies and the like.

Farming lends itself to these methods with much greater reluctance. The ordinary form of corporate activity is less applicable because of the relatively smaller scale of agricultural operations. Furthermore, the American farmer has been bred in habits of self-reliance and is proverbially hesitant to associate himself with his fellows or to make his fortunes dependent upon the decisions of others. While the lesson of association has been learned to a certain extent by the farmer abroad, only a beginning has been made in the development of agricultural coöperation at home. We shall have occasion later to appraise the limitations and the weaknesses of the coöperative movement. In general, however, the

American farmer may be said to be proverbially refractory to associated action.

A second difference between agriculture and industry consists in the proportion of the product that is consumed by the producer. In the early stages of economic life there was little disparity between the extent of production and that of consumption. In the period of the so-called closed economy, everybody produced what he consumed and everybody consumed what he produced. With the development of the division of labor and of the modern system of exchange, this correlation has almost entirely disappeared. The manufacturer of shoes does indeed himself wear shoes, but the quantity of shoes consumed by him is infinitesimal compared with the total production. Industrial output today is primarily production for somebody else.

In agriculture this is far less true. The farmer who formerly produced all that he consumed and consumed all that he produced is indeed rarely to be found today. But even at present a great part of the food that is consumed by the farmer is produced by him and not a little of his ordinary output of other commodities is utilized for the livestock that he raises. This does indeed not apply to products like cotton, and it is growing less and less true so far as concerns some of the staple food crops, especially in a surplus area. The more commercialized agricul-

ture becomes, the less are the distinctive differences between agriculture and the other forms of economic activity. It nevertheless remains a fact that in ordinary cases the farmer still depends to a far greater extent for his consumption upon his own surplus production and that he is less dependent upon the outsider as to his expenditures for food and housing.

The final, and perhaps the most important, distinction is to be found in the fact that whereas ordinary economic activity is a method of business, agriculture is rather a way of life. In modern times the industrialist or the trader differentiates sharply between his occupation and his home. Not only is his place of business separate from his residence but the entire psychology of his attitude differs in the two places. In the one he devotes himself to production; in the other he is concerned with consumption. The types of economic activity are distinct.

In agriculture this is not true. The American farmer lives on his farm; his production and consumption are intermingled. His home is his occupation; his occupation is his home. This makes him peculiarly tenacious of his customary mode of existence. As has been pointed out, perhaps the chief factor in weakening the response of the farmer to the ordinary economic motives and in preventing a rapid readjustment to changed conditions is the psychology of the farmer himself — his apathy in some cases,

his conceit in other cases, his refractoriness in still others, and finally his enmeshment of habits, customs and traditions.²⁹

Above all, the farmer is not a business man and will with difficulty become one. He does not keep books; he is not careful in his accounts; he does not know how to prepare a budget; he does not distinguish his personal outlays from his crop expenditures. Although he possesses a certain shrewdness and often a clear vision, he is easy-going and lacks many of the qualities that are needed for success in the fierce competitive struggle of modern business. The farmer, in short, is a man, not simply a part of a man; or, to put it in another way, while the individual displays in business life only some of the qualities that characterize human beings and is able to separate his vocation from his avocations, the farmer discloses in his career all of the human qualities and makes no distinction between vocation and avocation. Industry and trade, in other words, are forms of business; agriculture, although affected by the modern progress of enterprise, is primarily a mode of life.

Summing up all the considerations adduced in this chapter, we see that the problems of the farmer are

²⁹ Cf. J. D. Black, "The Rôle of Public Agencies in the Internal Readjustments of the Farm," *Journal of Farm Economics*, Vol. VII (1925), p. 165.

so complex because, while he is amenable to the general laws that govern economic life, he possesses characteristics of his own that differentiate him from the other classes of society. It is difficult enough to understand and to elucidate the general principles of economic life; it is still more difficult to appraise the forces that govern the prosperity of agriculture. This is, however, the problem that must be attacked in the question of Farm Relief. If the farmer is to be relieved of his difficulties, the most obvious need of the situation is to state what these difficulties are; and such a statement becomes possible only when we bear in mind both the general and the special characteristics of the farmer himself. Let us therefore now attack the problem by considering the chief difficulties of American agriculture.

CHAPTER III
AGRICULTURAL PROBLEMS

AGRICULTURAL PROBLEMS

1. THE CRITERIA OF CLASSIFICATION

The problems that confront the farmer may be divided into three categories according as we consider their period, their extent or their source.

From the point of view of the period involved, we may divide agricultural problems into the long-time and the short-time problems. The former are the perennial or the permanent or the recurrent problems that face the farmer in his endeavor to make a living. The latter are the temporary problems, connected with the transitions in the prosperity of agriculture. These transitory problems may again be subdivided into two classes, according to the length of the period involved. Where the period is one of gradual readjustment to new conditions which may last for a few decades, or perhaps for a generation or two, we are dealing with relatively short-time problems. In contrast to these we may put the immediate or emergency problems, which are due to sudden or dramatic changes in the situation. From the point of view of the time involved, therefore, we may classify agricultural problems into permanent, protracted, or emergency problems. The problems

are long-time, relatively short-time, and immediate problems.

The second classification of agricultural problems has reference to their extent. From this point of view the farmer's problems are universal or particular problems. The universal problems are those which apply to all forms of agriculture, in contrast with the problems of industry or commerce or any other kind of economic activity. Some of these more general problems have been touched upon in the preceding chapter. The particular problems of agriculture are those which differ from section to section, from area to area, from product to product and from grade to grade. From this latter point of view generalizations which are valid when we deal with the problem as a whole are of very little use. The problem of the eastern farmer often differs from that of the western, just as the problem of the southern farmer differs from that of the northern. The cotton problem is not the same as the wheat problem; the potato problem is not the same as the corn problem. Finally, the question of grade often assumes the utmost significance. The soft wheat problem may be entirely different from the hard wheat problem. The problem of Burley tobacco may differ fundamentally from that of other tobacco, and so on, *ad infinitum*. With reference to the same grade, the problem may be today one of exports and tomorrow

one of imports. A comprehensive study of the situation of the farmer must take continual note of these variations and differences.

The third criterion of classification is according to the source or origin of the problem. Here it would be necessary to classify the agricultural problems into world and domestic problems. Certain problems find their origin in forces that transcend domestic considerations, while others are more intimately related to the conditions of a particular country or to a policy pursued by a particular government.

It is clear that inasmuch as we employ a different criterion in each classification, there is bound to be an overlapping irrespective of the criterion employed. If, for instance, we deal with agricultural readjustment, we have to face not only universal and particular considerations but also world and domestic considerations. Again, if we deal with a special food product, we have to be mindful on the one hand of the recurrent as opposed to the immediate considerations, and on the other hand of world causes as opposed to domestic causes. Finally, if we are considering a domestic problem more or less unconnected with world conditions, we must distinguish on the one hand between the long-time and the short-time problem, and on the other hand between the universal and the particular problem.

It is therefore difficult to present an analysis of

the situation without confusing the various criteria. The best avenue of approach in considering the present situation in the United States seems to be, at the outset at least, the division into world problems and domestic problems, reserving for later consideration the application to the domestic problems of the distinction between the long-time and the short-time considerations, and, still further on, the distinction between the universal and the particular considerations. Any other course of procedure would render impossible a clear picture of the situation.

2. THE WORLD PROBLEMS

Starting out, therefore, with a consideration of world and domestic problems, we may select as the chief world problems those which affect the general price level of agricultural products.

In modern life, where the farmer no longer produces all that he consumes or consumes all that he produces, but where his prosperity depends to a large extent upon the prices that his products fetch in the market, the welfare of the farmer is intimately bound up with that of every other class in the community. Agricultural prices are closely related to prices in general. In fact, a consideration of fundamental import is the connection between the farmer's welfare and the general price level.

This is of course true of every member of a mod-

ern community. Whether an individual prospers depends upon a series of considerations. At the outset lies his ability to deal effectively with the particular conditions of production in his special commodity. He exercises some control at least over the elements of efficient production and the possibility of cutting the cost. When his goods leave the factory or farm on their way to the final consumer, his control is often less marked and his dependence upon other individuals more pronounced. When the commodity reaches the final consumer, he is still more at the mercy of changes in the habits or whims of individuals over whom he can exercise little, if any, control.

To some extent, however, the efficient producer can take note of these successive factors so far as his own commodity is concerned. He can bring some influence to bear upon the middleman; he can even by judicious advertising or in other ways modify the idiosyncracies of the consumer. But the price that he can secure for his product in the market depends upon the prices of competing commodities; and in proportion as his market widens out from the local to a national or a world market he is exposed more and more to the influence of factors over which he has virtually no control at all.

Prices are values expressed in terms of money or the unit of purchasing power. While particular prices vary with the conditions affecting the partic-

ular commodity, the general price level is the expression in terms of money of the interrelations of all prices. Changes in the general price level are therefore due to alterations which originate either in the mass of commodities themselves or in the conditions of money, using the term in the widest sense. Inasmuch as life means change, constant alterations are taking place in both factors. When the supply of money or purchasing power becomes more abundant in relation to commodities in general, prices rise; when it becomes less plentiful, prices fall. Just as there is always a tendency for prices of different commodities to come into an equilibrium which is ultimately in a close relation on the one hand to the costs or efforts undergone by the producer and on the other hand to the sacrifice of acquiring the commodities imposed upon the consumer, so the general price level depends upon an equilibrium between the mass of commodities as a whole and the amount of money or purchasing power. Just as there is a constant change in particular prices, so there is an uninterrupted change in the general price level. For money itself is a commodity and fluctuates in value like other commodities.

At any given time or place we are confronted by the conditions of change implied in the terms rising and falling prices. In the transition from high to low prices and vice versa, are to be found significant ex-

planations of economic welfare. Producers are prosperous in a period of rising prices because in the interval between the first steps in the process, where the acquisition of the raw material is calculated on a definite share of the finished product, and the period when the commodity is finally sold, there is an increase in the margin of profitableness. Rising prices spell prosperity for the producer, whatever may be the contrary results for other classes in the community, such as consumers, investors, recipients of fixed incomes and the like. Falling prices have the opposite effect.¹

It is only recently that we are beginning to understand the two great aspects of changes in the general price level. The one consists of the periodic alternations of high and low prices that we call business cycles; the other consists in the exceptional movements due to some fundamental cataclysm.

The more exceptional movements are due to causes affecting commodities or the money supply or both. Examples of the first class are famine, flood, plague, earthquake and the like. If comprehensive enough they may produce such a widespread shortage of commodities as to lead to a dearth in both senses of the term — deficit and dearness or high price. The impetus to the change, however, may come from the

¹ Cf. in general Seligman, *Principles of Economics*, 11th ed., 1926, pp. 461 *et seq.*

side of money. The so-called revolution of prices in the sixteenth century was due to the discovery of the New World and the prodigious additions to the quantities of the precious metals used as money. More familiar examples of such a rise in the general price level are seen in cases where a country has adopted a system of paper or fiat money as a consequence of which the great increase in the amount of the circulating medium has reflected itself in a higher price level. The experiments with Continental paper money in the American Revolution and with the assignats in the French Revolution and the more recent tragic experience of Germany and other Continental countries are familiar to all.² Of the same general character is the revolution in banking and credit conditions which took place in Japan half a century ago and which brought about the marked rise in the general price level.

The chief illustration of influences of the combined effects emanating from both commodities and money on the general price level is seen in war. In war we have to start with a dislocation of all conditions of production and consumption. Production is cut down by the departure of the workers to the front, and it is only with difficulty that the farmers are even partly replaced by farmerettes. Consumption is increased by the prodigious demands of government for cloth-

² Cf. Seligman, *Currency Inflation and Public Debts*, 1921.

ing, supplies and munitions of war. Moreover, this consumption is of an unproductive character, not only because of the nature of war itself but owing to the waste inseparable from war. The decrease of production and the increase of consumption constitute the first steps in the rapid rise of the price level. The dislocation of the economic equilibrium so far as commodities are concerned is accentuated by the change in the conditions of purchasing power brought about by the government loans and war taxation, culminating in the frequent resort to paper money. For if taxation is excessive, individuals and corporations will often have to borrow in order to pay their taxes. The result of these combined influences is a huge inflation with every appearance of great prosperity. It is chiefly in this way that the community is usually deluded into the belief that war is endurable. Were it not for the fact of rising prices, wars would be far less protracted than has ordinarily been the case. For in rising prices the business community finds a partial compensation for the losses and ravages of war.

When the war is over and the bubble is pricked, we enter upon a period of falling prices or deflation. The return to normal conditions increases the possibilities of mass production; the ravages of the war have almost inevitably resulted in a decrease in the purchasing power of the consumer; and the return to

the coin standard with the compulsory revalorization of the paper currency caps the climax. As a consequence, the after-war fall of prices is often even more dramatic than the preceding rise. The individual producer is caught in a maelstrom for which he is not responsible. Despite frantic efforts to extricate himself he faces loss and even ruin.

More common and sometimes scarcely less dramatic are the more periodic alternations that we call business cycles, culminating in our great crises and panics. Although we do not yet completely understand these phenomena,³ it may be said that they also are due to causes arising from the side both of commodities and of money. Examples of the former kind are seen in the successive waves of exhilaration, speculative activity and the overstraining of productive forces which are associated with our business crises. Recent examples of the causes emanating from the side of money are the changes due to the discovery of gold in the middle of the nineteenth century, and to the opening up of the bonanza mines coupled with the demonetization of silver in the last quarter of the century.

Whatever may be the explanation of these cycles of prosperity and depression, it is significant that in agriculture and industry we find these movements

³ Cf. the great work of my colleague, W. C. Mitchell, *Business Cycles*, 1927.

sometimes working together, sometimes differing from each other. The more widespread and far-reaching the so-called business cycle, the more apt is agriculture to be caught in the same toils as industry;⁴ the more specialized and differentiated the causes of dislocation of the economic factors in agriculture as compared to industry, the more possible is it to have comparative prosperity in the one branch and comparative adversity in the other.

Familiar examples of more general and simultaneous effects are afforded by the crises of 1837, of 1873 and of 1894. In every case agriculture, like business, was hard hit; and the sad plight of the farmer, misunderstood and not adequately appreciated, led to great political movements. In the earlier period the remedy was sought in opposition to banks; after the Civil War the lance was broken in favor of greenbacks or fiat money; a little later came the Granger movement directed against the railways; and at the end of the century came the Populists with their advocacy of free silver. Abortive and unsuccessful as most of these movements were, the agitation was in every case gradually allayed in proportion as a readjustment in the general level of prices took place; and with this creation of a new equilibrium, falling prices were slowly arrested until

⁴ This does not mean that the agricultural depression has been caused by the industrial depression. This phase of the subject has been studied by Engberg, *op. cit.*

the upward swing of the price level again introduced prosperity and contentment.

On the other hand we also have illustrations of the opposite phenomenon, where there was a different tempo in the influence of price-level changes on agriculture and industry respectively. While examples of this disparity might be chosen from the annals of business cycles, the most striking illustrations are afforded by the consequences of sudden upheavals like war. A good example is the condition of English agriculture after the Napoleonic wars, when the distress was universal and prolonged and at the time baffled the efforts of the economists and the practical men to understand the situation. Of the same nature is the recent development in the United States.

The World War caused an unexampled rise in the general price level, and the peculiar situation of the American farmer, upon whom at bottom rested the responsibility of feeding all the Allies, resulted in an almost equally remarkable rise of agricultural prices.⁵ When the reaction came after the War, and when the first shock of the general crisis of 1920 was passed, the conditions of agriculture and industry diverged. The transition of the United States to a world creditor basis; the lessons that had been learned during the War as to the advantages of mass production, integration and the economy of high wages; and the

⁵ Cf. F. M. Surface, *The Grain Trade during the World War*, 1928.

spectacular development of the automobile helped to create an industrial prosperity which has remained virtually unbroken to the present day. On the other hand, the dropping of the bottom out of the purchasing power of Europe and the fall in its standard of life caused a lessening of the demand for agricultural products; while the great increase of world acreage for which the high prices of the War period were partly responsible prevented a decrease of supply. Underdemand and oversupply coupled with the existence of the agricultural lag which, as we have learned, is of especial importance in a period of falling prices, prevented the rapid readjustment which was found in industry. Thus American agriculture continued to suffer, while general business prospered.

At the same time, because of the interrelations between the various criteria of classification mentioned above, the situation differs from area to area and from product to product. The tempo of the recovery has varied considerably. In the cattle industry the recovery has been well marked, in corn it has been less pronounced, in wheat it has been still less evident. In some sections of the country there is no longer a farmers' problem, in others the suffering is still great and the discontent is profound.⁶

⁶ Cf. H. C. Taylor and J. Perlman, "The Share of Agriculture in the National Income," *The Journal of Land and Public Utility Economics*, Vol. III (1927), p. 145.

In its fundamental aspects, therefore, the present agricultural depression is due, in part at least, to world causes. To ascribe all of our present difficulties to world causes, however, would be inexact. As we have intimated in the first chapter, forces have been at work within the nation itself which have influenced the situation. These domestic forces have been partly the result of our general economic development, partly the consequence of government action or inaction. We have, in other words, to deal not only with the problems of a permanent nature which perennially face the farmer, but also with the newer problems of changed conditions and even of an emergency character by which he is confronted at present.

3. THE DOMESTIC PROBLEMS

From the point of view of the present-day conditions there are two main categories of domestic problems in agriculture: problems of cost and problems of price. In each of these there are permanent and short-time factors, universal and particular considerations.

a) PROBLEMS OF COST

The problems of cost are so numerous that they can best be discussed under four heads: the problems of production, the problems of disposition, the problems of consumption and the problems of tax-

ation. Each one of these deserves a somewhat more extended analysis.

(1) *Costs of Production*

If we take up, in the first place, the problems of production costs, we find that they really fall into two large classes: those connected with the factors of production in general and the narrower problems of the technique of production.

The factors of production are land, labor and capital. A few words as to each of these.

i) *Land*. The first question which confronts the farmer is that of the land. Is his land good or poor? Will it cost him too much in proportion to what he can get out of it? Is it actually dear land or only relatively dear and actually cheap? Is his land intramarginal, marginal, or submarginal land? Can he look forward to a rise in land values which may help him over unexpectedly difficult places?

While these conditions differ from farm to farm and from area to area, it must be remembered that the prosperity of farmers as a class, and therefore to a certain extent of each individual farmer, is dependent upon the land situation as a whole. If, as we have already learned, there is at any particular time a relative oversupply of land, the pressure of land upon population will be such as to reduce the profits of all farmers. The margin will be lowered and the

costs of the marginal and the submarginal farmer will be excessive. So far as affects the particular farmer, while the costs connected with land seem at first blush to be of concern only to the individual, he is nevertheless more or less affected by the problem of costs as it affects his neighbor.

This permanent problem of the farmer is intensified at the present time when it has become a matter of immediate urgency. The conditions of a few years ago resulted in a marked increase of land values, even though this increase did not keep pace with the still greater increase in the general price level. The high prices and great profits of the boom

INDEX OF FARM REAL-ESTATE VALUES PER ACRE
(Average value per acre in years 1912-1914 = 100)

Year	<i>In current dollars</i> Index	<i>In dollars of uniform purchasing power</i>
1914	103	103
1915	103	102
1916	103	94
1917	117	71
1918	129	63
1919	140	68
1920	169	73
1921	157	92
1922	139	95
1923	135	86
1924	130	85
1925	127	80
1926	124	80
1927	119	79
1928	117	79

period were reflected into rising land values, which are always the capitalization of present and expected earnings. The table on page 114 presents a picture of the change in real-estate values.⁷

From this it will be seen that by 1920 real estate values had increased almost 70 percent over those of less than a decade before, and that there was a steady fall thereafter, so that at present values have almost reached the pre-War level; while in purchasing power they represent much less than before the War. The situation differs of course widely in various sections, as appears from the table on the following page.⁸

It will be seen that the boom was most marked in the West North Central, the South Atlantic and the East South Central states and especially in South Carolina and Iowa owing to the influence of wheat and tobacco. The decline of values has, however, been almost equally great in states like Indiana, while in California values have about held their own, and in states like Connecticut they have even increased. The figures for Florida will be found interesting as showing the results of the very recent speculative movement in that state.

⁷ Cf. O. E. Baker, *The Need for Agricultural Land*, address at the Conference of the Institute of Politics at Williamstown, August, 1928, p. 10.

⁸ E. H. Wiecking, *The Farm Real-Estate Situation, 1926-1927*, Department of Agriculture, Circular No. 15, October, 1927, pp. 5-6.

INDEX NUMBERS OF ESTIMATED VALUE PER ACRE OF FARM REAL ESTATE
(1912-1914 = 100)

Year.....	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
United States.....	97	100	103	102	108	117	129	140	169	157	139	135	180	127	124	119
New England.....	99	101	100	99	102	112	117	123	140	135	134	180	128	127	128	127
Middle Atlantic.....	98	100	102	100	104	112	117	121	136	127	118	116	114	114	113	111
East North Central.....	97	100	103	103	109	115	126	134	159	150	130	126	120	115	110	103
West North Central.....	97	100	103	105	114	122	134	147	184	174	150	142	132	120	121	115
South Atlantic.....	97	100	103	98	108	119	135	161	138	174	146	152	151	148	143	137
East South Central.....	97	100	103	99	109	120	140	162	199	160	149	149	142	141	139	133
West South Central.....	96	100	104	100	103	116	134	143	177	159	136	132	136	144	144	139
Mountain.....	98	102	100	98	98	106	117	130	157	138	122	122	110	105	103	101
Pacific.....	94	99	106	107	111	122	129	134	156	155	151	151	147	146	144	143
Indiana.....	98	100	102	101	110	116	128	135	161	147	119	115	108	102	95	87
Iowa.....	96	99	104	112	123	134	145	160	213	197	162	156	143	136	130	121
South Carolina.....	101	98	101	94	98	107	122	162	230	186	126	128	136	138	128	113
Florida.....	96	99	105	97	103	109	126	143	178	176	157	155	163	172	223	183
California.....	93	99	103	111	116	130	136	142	167	168	166	165	164	164	163	162
Connecticut.....	98	100	102	100	102	110	116	121	137	134	140	137	140	137	137	138

To the extent that the present owners bought their farms or acquired increased holdings by cash payments during the boom period, it is clear that we have an adequate explanation of many a farmer's troubles. This is especially true in cases where he allowed some of the purchase price to remain on mortgage. Having bought land at the swollen prices of the inflation period, he now finds it virtually impossible to earn a satisfactory return on his investment. For, as we have seen above, the ratio of fixed capital to circulating capital charges is higher in agriculture than in industry. In fact the farmer now loses doubly, not only in the increase of his costs, but in the diminution of his land values.

To this extent the farmer may be said to be responsible for his own difficulties, which are thus in large measure his own fault and due to his lack of foresight. It is worthy of note that the distress of the Australasian farmer, also, is ascribed by competent observers primarily to this factor.⁹

⁹ "The most serious burden pressing on the farmer is the inflation of capital charges in respect of land, accompanied by a similar inflation of mortgage charges. Although the precise extent of this burden cannot be stated there remains no reasonable doubt that the figure involved in bringing back annual capital charges to the 1914 parity with export prices is considerably greater than the figure involved in bringing back wages or taxes to the same parity. There is considerable reluctance on the part of farmers to face this fact — partly because the tradition of high land-values and the habit of looking to a future profit out of the realization of land-value increment have raised psychological barriers to acceptance of this view; partly be-

As against this general indictment, however, there are three considerations to be stressed. In the first place, even where the farmer bought more land in the inflation period, it was his misfortune rather than his fault. For what is more natural than for a man to invest his surplus profits in something with which he is supposed to be acquainted, rather than in securities of which he possesses no adequate knowledge? If he is injured by the transition from inflation to deflation he is no more to be blamed than the member of any other class similarly affected by the instability of the price level. While he is, indeed, not justified in making somebody else the scapegoat, it is equally illicit for anyone to put the blame on him.

In the second place, there are many individuals who owned their farms before the period of inflation and to whom the swollen land values represented simply paper profits, the disappearance of which might be unwelcome but not embarrassing. In fact, they comprise the overwhelming mass of cultivators who are none the less in an exceedingly difficult condition. The swollen land values may possibly have induced them temporarily to spend more

cause other real or apparent burdens seem, on the face of them, more easy to alleviate. One of the most disquieting features of post-War economics is the fact that the creditor class is taking an increasing share of the returns from our basic industries."—H. Belshaw, *The Economic Position of the Farmer in New Zealand*, Auckland University College, Bulletin No. 4, 1928, p. 7.

and to improve their scale of living, but could otherwise not have had any effect in increasing the disparity between costs and profits. The farmer who did not buy at inflated prices must not be held responsible for the actions of those who did.

In the third place, however, there is a sense in which swollen land values are partly responsible for the agricultural depression, even in the case of those that did not purchase land. The high prices of the boom period led to the elevation of the marginal land. Many a farmer was induced by the prosperity of the War period to extend his holdings and to acquire relatively poor land which, under the prevalent conditions of exaggerated prices, promised satisfactory returns. With the disappearance of these conditions this poor land has now become submarginal land, entailing permanent loss. The margin, in other words, has been lowered to such an extent that the low-grade farm threatens to create a low-grade farmer, with its depressing effect upon the class as a whole. The relative oversupply of land, which is partly the consequence of swollen prices and inflated land values, thus affects the prosperity of the farmers as a class, and enmeshes in its net those who did not increase their holdings as well as those who did. The costs ascribable to land which are manageable in periods of high prices become unmanageable in periods of low prices.

ii) *Labor.* Coming, in the next place, to the second factor in production, that of labor, everything depends upon whether we are looking at the problem from the point of view of the farmer or of the farm hand. The problem is here not very different from that of the employer in general. We must distinguish between the short-time and the long-time point of view. From the short-time standpoint, increased wages mean augmented costs. But from the long-time point of view we are confronted by several considerations. The higher wages may induce greater efficiency, so that they may spell a reduction of cost.

It is much the same as the reduction in the hours of labor in industry, which have on the whole led to augmented output and therefore to lower cost. In addition, the larger income of the laborer will entail increased purchasing power, so that it will ultimately affect the prosperity not only of the farm but of the factory; and the increasing output of the factory will again react upon the welfare of the farm. In the long run, the economy of high wages is as true of agriculture as of industry. In a period like the present, however, and during the interval, the rise of wages intensifies the difficulties of the farmer. The recent rise in farm wages is due partly to the restriction of immigration, which has lessened the relative supply of farm labor, and partly to the great increase of industrial wages, which has helped to

lure the farm hand to the factory. The rise of industrial and of farm wages as compared with the increase of prices is shown in the following table:¹⁰

GENERAL TREND OF PRICES AND WAGES
(1910-1914 = 100)

Year	Whole-sale prices of all commodities	Industrial wages	Prices paid by farmers for commodities used in			Farm wages	Taxes
			Living	Pro-duction	Living Pro-duction		
1910-----	103	---	98	98	98	97	---
1911-----	95	---	100	103	101	97	---
1912-----	101	---	101	98	100	101	---
1913-----	102	---	100	102	100	104	---
1914-----	100	100	102	99	101	101	100
1915-----	103	101	107	103	106	102	102
1916-----	129	114	125	121	123	112	104
1917-----	180	129	148	152	150	140	106
1918-----	198	160	180	176	178	176	118
1919-----	210	185	214	192	205	206	130
1920-----	230	222	227	175	206	239	155
1921-----	150	203	165	142	156	150	217
1922-----	152	197	160	140	152	146	232
1923-----	156	214	161	142	153	166	246
1924-----	152	218	162	143	154	166	249
1925-----	162	223	165	149	159	168	250
1926-----	154	229	164	144	156	171	253
1927-----	149	231	161	144	154	170	---

It will be seen that while wholesale prices have risen from 100 to 149, farm wages have increased to 170 and industrial wages to 231. The scarcity of agricultural labor has been partially but only inadequately compensated by two facts. Since the immigration law does not apply to the American continent, we have

¹⁰ Cf. *The Agricultural Situation*, Bureau of Agricultural Economics, Vol. XII, No. 11 (November, 1928), p. 4.

had in certain sections a decided increase in the cheap labor of the Mexican peon; and in a more general way the number of farm hands has been reduced by the growing use of farm machinery. In the main, however, agricultural wages have risen; and even though the labor costs have not increased in proportion to the actual growth of wages, yet on the whole the augmented cost of this factor of production has undoubtedly added to the difficulties of the farmer.

iii) *Capital*. The third factor in production is capital. The farmer needs capital in various ways. He needs capital in the shape of actual commodities or implements to aid him in production; he needs capital in the shape of a fund of money to enable him to extend his operations; in another sense in which the term capital is sometimes used, he needs capital goods for himself and his family. Reserving this last point for consideration under another head, the two problems with which we have to deal here are the problems of machinery and of credit.

Taking up first the question of agricultural machinery, it is obvious that the larger the farm the greater will be the advantages of mechanization. Continuously present, however, is the problem of paying for the relatively expensive machines. The modern combine costs from one to three thousand dollars and lasts about eight years. Recent studies

have arranged the chief agricultural machinery in the following order of costliness: tractors, cream separators, binders, corn shellers, cultivators, mowers, manure spreaders, incubators, harrows, ploughs, drills, corn planters, ensilage cutters, grinders, sprayers, sulky rakes and potato diggers.¹¹

While the cost of the individual machine may be moderate, the total outlay for proper mechanization is considerable, especially when we add the trucks and the automobiles ¹² which have become well-nigh indispensable adjuncts to the operations of the up-to-date farmer. It is interesting to observe that in 1925, so far as the average farmer's outlay for commodities is concerned, a little more than one-third went for clothing, a little less than one-third for food, and most of the remainder for operating expenses and building materials. In this last category seed, fertilizer and feed represented respectively 5, 10 and 25 percent; machinery together with fuel and oil constituted over 40 percent. The expense for machinery is therefore considerable. The situation has been somewhat eased in recent years through the

¹¹ Cf. *Index Numbers of Prices the Farmers Pay for Commodities Purchased*, Bureau of Agricultural Economics, Department of Agriculture, August, 1928.

¹² Cf. the article by one of my former students, H. W. Peck, "The Influence of Agricultural Machinery and the Automobile on Farming Operations," *Quarterly Journal of Economics*, Vol. XII (1927), p. 534.

development of the instalment system.¹³ The problem, however, of the substitution of machinery for manual labor and the limits within which it becomes profitable is one that continually faces the modern farmer.

The other side of the cost of capital has reference to the interest that the farmer must pay on what he borrows.

It is a trite observation that the modern development of credit facilities has enured primarily to the benefit of industry. Credit itself is of a comparatively recent development. It was virtually unknown in early times except in the form of temporary advances to the individual in order to tide over emergencies in his consumption, as in the case of the pawnshop. The development of producer's credit was an accompaniment of the industrial revolution. The new scale of business life required a new mechanism in the flexibility of capital, which was finally attained by development of modern banking systems.

Agriculture, however, had to depend for a long time on the continuance of the comparatively simple situation where the advances were made to the farmer at such exorbitant rates and under such stringent conditions as virtually to put the farmer at the mercy of the lender. The history of many a country is to be explained in terms of the more or less un-

¹³ Cf. Seligman, *The Economics of Instalment Selling*, 1927.

successful revolt of the farmer against the usurer.

The modern change in agricultural methods brought with it the need of a more adequate supply of credit. The ordinary bank was an unsuitable agency for this purpose, as land with its continual fluctuations in value did not supply the conditions under which the bank assets could be quickly mobilized. In some countries relief was sought through a system of coöperative banks. In the United States a great step forward has been taken by the farm-loan and intermediate credit banks.¹⁴

While progress has indubitably been made in the provision of long-time as well as of short-time credit, the conditions as to the somewhat intermediate periods are still far from satisfactory. In many places the farmer has still to pay an exaggerated interest for his loans, running up even at present to 20 per cent or more, and almost uniformly the facilities for securing credit are still distinctly less adequate than

¹⁴ For a good study of these, cf. the work of one of my former students: Clara Eliot, *The Farmer's Campaign for Credit*, 1927. See also C. L. Benner, *The Federal Intermediate Credit System*, 1926; and Valgren and Englebert, *Farm Mortgage Loans by Banks, Insurance Companies and Other Agencies*, Department of Agriculture, Bulletin No. 1047, 1921. Further discussion of the problem may be found in C. L. Benner, "Has Credit Legislation Gone Far Enough and in the Right Direction," *Journal of Farm Economics*, 1925, p. 88; and A. G. Black, "The Provision for Agricultural Credit in the United States," *Quarterly Journal of Economics*, Vol. XLVIII (1928), p. 94. An earlier work of a more general character is J. B. Morman, *The Principles of Rural Credits*, 1915.

in the case of the industrialist or the city dweller. The difficulties in this respect are still pronounced.¹⁵

In contrast to the general consideration of credit, from the point of view of the costs involved, is the larger immediate problem of the provision of credit at whatever cost. We refer here to the state of affairs that has been created by the catastrophe of 1920. Many a farmer has ever since that date been struggling with the burden of mortgage debt which has been resting upon him and which, contracted in a period of inflation, has become overwhelming with the general decline of prices.¹⁶ This is indeed always true of

¹⁵ The above statements as to the present inadequacy of credit are confirmed by the recent report on coöperative marketing made by the Federal Trade Commission.

"Many producers of farm products, because of their financial condition and the conditions under which they produce their crops, are forced to sell at harvest-time regardless of price, in order to satisfy creditors who have carried them through the productive season. Although mortgage credit is generally available on reasonable and suitable terms, and while to a certain extent agricultural credit coöperatives have been of service in obtaining production credit, such facilities are not generally available. Farmers in many sections continue to pay high rates of interest for production credit. This is especially true in the South and in some of the grain-bearing sections. Lack of proper production credit facilities causes precipitate marketing at harvest time and retards the development of orderly marketing through coöperative associations. . . . The financial condition of the farmer and the existing credit facilities indicate that he will need further assistance in establishing himself on a sound operating basis."—*Coöperative Marketing: Letter of Submittal from the Chairman of the Federal Trade Commission, 1928*, pp. 58, lvii.

¹⁶ The government estimate of farm mortgages outstanding is as follows: 1910, \$3,470 millions; 1920, \$3,560 millions; 1925, \$9,200

debtors in a period of price decline; but the present situation is one of extreme gravity. While many farmers have already sunk under the load and have been swept away with the current, a large number are still struggling to keep their heads above water. If they could be assisted to do this, the probability is that within a comparatively short time they will emerge into the smoother waters of normal conditions. The particular difficulty under which thousands of farmers are still suffering is that of being unable to adjust their pressing debts so as to have a period of breathing time. What they urgently need are such credit adjustments as will enable them to avert their impending ruin and to start afresh with a reasonable prospect of success.

Summing up the preceding considerations affecting the factors of production, it will be realized that perhaps the most important problem is that of the proper combination of the productive factors.¹⁷ As the farmer's operations grow in importance, he is confronted by the question whether he should devote his increasing capital or his operating funds to the purchase of more land or to changes in methods on the existing lands. There are here involved many problems of the most practical character. Shall the millions; 1927, \$9,000 millions. Cf. Valgren and Englebert, *op. cit.*, p. 107.

¹⁷ For a good discussion of this, cf. J. D. Black, *Production Economics*, 1926.

extensive type of agriculture be replaced by the more intensive type? Is the large farm or the small farm more profitable? If an extension of the area seems wise, shall the farmer pay as he goes or borrow on mortgage in order to increase his holdings? The number of difficulties involved in this range of problems is manifold. There is little reason to wonder at the perplexities of the farmer and the frequent errors which he has committed. That these errors were especially great during the period of War inflation is beyond all peradventure of doubt. Not an insignificant part of the troubles that still beset the American farmer may be traced back to the commission of such errors at the close of the last decade.

Having discussed briefly the costs connected with the factors of production, we come next to the second class of the problems of the cost of production that deal with questions of technique, including those generally comprised under the head of farm management.

iv) *The Questions of Technique.* This category includes such problems as the selection of crops to suit the region; the methods of cultivation; the practice of diversification and the like. The problems here are of a general character, although the importance of a correct solution becomes far greater in a period of depression like the present.¹⁸

¹⁸ The literature on the subject of farm costs and farm manage-

One of the first difficulties that confront almost every farmer is to make the correct selection of crops. In some cases this is relatively easy because the character of the climate eliminates from the very outset certain possibilities. The farmer in Maine is not faced with the question of raising cotton; the Arkansas farmer does not bother about silk culture. But within certain general limitations there is almost always the possibility of a wide choice depending largely upon the character of the land itself. It may take the farmer a long time and may frequently involve a painful experience thoroughly to understand the exact nature of his land. Often, even after he has once reached a satisfactory decision as to the selection of the best crop, there remains a wide choice as to the varieties most suitable not only to the particular kind of land but to the special conditions of its location. The farmer must understand

ment is enormous. A general discussion will be found in M. K. Bennett, *Farm Cost Studies in the United States*, 1928, published by the Food Research Institute of Stanford University. Among the most valuable of recent studies is Tolley, Black and Ezekiel, *Input as Related to Output in Farm Organization and Cost-of-Production Studies*, 1924, U. S. Department of Agriculture Bulletin No. 1277. Worthy of mention are L. C. Gray, *Introduction to Agricultural Economics*, 1924; W. J. Spillman, *Farm Management*, 1923; and C. L. Holmes, *Economics of Farm Organization and Management*, 1928. Cf. also R. T. Ely, *Outline of Land Economics*, Vol. II, *Costs and Income in Land Utilization*, 1922; and H. C. Taylor, *Outline of Agricultural Economics*, 1925. Earlier works are G. F. Warren, *Farm Management*, 1913; H. T. Scovell, *Farm Accounting*, 1918; and E. G. Nourse, *Agricultural Economics*, 1916.

the character of the soil as well as the adaptability of the crop to its market. These problems of proper adjustment are found, indeed, in every form of production; but in ordinary industrial and commercial life the range of choice is far more limited. While agriculture is in many respects a more simple occupation than industry, it is, in this regard at least, more complex, and requires a greater degree of judgment and of expert knowledge.

In the next place, there is in agriculture as everywhere else a certain technique involving the difference between inadequate and improved methods of cultivation. The careful farmer will lay stress upon drainage, upon fertilization and upon the proper methods to prevent soil exhaustion. Since the introduction of crop rotation he has a wide range of selection and a broad opportunity for the exhibition of care and intelligence. It is largely in this respect that we find the difference between success and failure, and that we must distinguish between the keen, alert, industrious, careful and intelligent farmer on the one hand and the slovenly, lazy, stupid or ineffective cultivator on the other hand. In no occupation do character and knowledge count for more; nowhere do we find such contrasts in technical accomplishments.

As a corollary of the above considerations, one outstanding problem that confronts the modern

farmer is that of diversifying his output. In ordinary economic life there are great advantages in specialization, and the same is undoubtedly true in many agricultural areas which are especially suited for particular varieties of crop. The obstacles to diversified farming, however, are often pronounced. It calls for greater experience and intelligence than a single crop and is rendered difficult in sections where the general conditions of land tenure, as in the South, militate against any departure from the one-crop system.

We have up to this point spoken of the costs of production, including problems of the productive factors as well as of technique. We have next to consider that stage of the farmer's operations which lies between technical production and the final consumer, namely, the costs of getting the product to the market. This may be summed up under the head of the costs of disposition. Here we have to deal not only with the long-time problem, but especially with the actual short-time difficulties of the present.

(2) *Costs of Disposition*

The problems of disposition are specially troublesome because, in contradistinction to the costs of production, the farmer is to a greater extent dependent upon others. The difficulties are, in large measure, those over which he himself can exert only

relatively little control. The costs of disposition are found chiefly in the fields of transportation and of the handling, or marketing, machinery.

i) *Transportation.* The problem of transportation includes the railroad situation and the question of internal navigation. The difficulty here is a double one. The distance of the farms from the market is in this country frequently so great that the demand for low freight rates has come into conflict with the corresponding and entirely justifiable demand on the part of the railways for adequate revenues. The farmer is faced by the difficulty of adjustment between his interests and those of the railroad investor. If he pushes his claims to the point of unduly reducing the income of the railroads, the adequacy of the service will be impaired, and the burden will be thrown back upon the farmer, as well as upon the other shippers. There is involved in this situation not only the choice of a suitable principle to govern freight rates, but the entire question of the possibility of satisfying the claims of both shipper and investor through a system of privately owned and managed railroads.

So far as internal navigation is concerned, the difficulty consists in the fact, not of high charges, but of the non-existence of facilities. The efficacy of the old-time canals has long since disappeared, and the problems that confront the country are the possi-

bility and the advisability of creating a new system of water transportation which may succeed in improving the opportunities of the farmer. This point we shall discuss later.

The problem of transportation is, therefore, both a permanent and an emergency problem. It is a long-time problem because a reduction, or at all events the absence of any increase, of freight rates is destined to play its rôle in countervailing the higher costs which must accompany the gradual wearing out of the existing lands and the resort to lower-grade areas. It is a short-time problem because, in the present period of low prices, the refractory nature of transportation rates has been and is of considerable importance in explaining the lag in the readjustment of agricultural prices to a normal level. While consumer prices of food products have fallen, freight rates have remained stationary or in some cases have actually risen, with the result that farm prices have fallen still more, or at least have not made the recovery that was to have been expected from a readjustment of supply and demand in the retail market. The transportation problem urgently calls for a solution.

Even more important than the question of transportation is that of the marketing machinery.

In many of our agricultural products there has been developed a remarkable and in some ways an

admirable marketing mechanism. In the more important staple crops this machinery has not infrequently centered around the produce exchanges with their methods of speculative activity. This brings up the rôle of speculation in modern life, about which there has been much discussion and much difference of opinion.

ii) *Speculation*. On the one hand we have those who ascribe to speculation most of the evils under which the farmer suffers — chiefly the violent fluctuations in price with the burden of cost resting on the farmer in the shape of a depression of price. On the other hand we find those who maintain that speculation exerts a stabilizing and equalizing effect and that without the modern machinery of speculation the farmer's difficulties would be far more pronounced than they actually are.

The truth seems to lie, as is so often the case, in the middle. So far as general economic theory is concerned, scholars have believed, ever since the time of John Stuart Mill, that there is a decided function for speculation to perform. The growth of the stock and produce exchanges constitutes ample proof of this fact. For they would not have increased to their present proportions if they were not accomplishing a definite task of importance to the community. To anyone acquainted with the hedging operations in wheat or cotton, for instance, it is

abundantly clear that speculation, when conducted by those experienced in the business, succeeds not only in securing a greater stability of prices but also in transferring the risks of fluctuation to a special class of experts. Speculation in this sense of the term conduces to regularization and stabilization.

It is none the less true, however, that the temptations of profit by extreme variations of price on both the bull and the bear side inevitably engender in venturesome individuals the endeavor to secure control of the market, and by a sufficiently great series of short or long sales virtually to control the price. In the stock exchange the growth in the magnitude of the operations, as well as other factors, has to a large extent eliminated these spectacular variations which in our early history culminated in corners and pools. In some of the produce exchanges, however, these phenomena have not entirely disappeared; and while successful corners are much more rare than formerly, it is still true that transactions on a prodigious scale by the most daring operators occasionally cause extreme temporary fluctuations in price. These facts have been made abundantly clear in the case of wheat, for instance, by recent investigations of the Grain Futures Commission.

The net result is that while the ordinary result of speculation is to stabilize prices, the occasional consequence is just the reverse. The farmer has indeed

learned the futility of the attempt to prevent all speculation or all trading in futures, and has grasped the truth of the old adage that one must be careful not to pour the baby out with the bath. But he is quite correct in thinking that agricultural prices are still exposed under certain conditions to the risks of undue manipulation by extreme speculation.¹⁹

iii) *Marketing*. Speculation, however, is only one of the features of the marketing machinery. There are many stages in the progress of the commodity from the farmer to the final consumer. While there has been a natural development in these intermediate processes, the lack of any centralization or control has conduced to a more or less anarchic condition, frequently marked by waste and duplication of efforts. It is often said that under our modern economic system we can always depend upon the forces of competition to bring about satisfactory results. To anyone, however, who is acquainted with the recent studies on the perils of certain forms of

¹⁹ Cf. *Fluctuations in Grain Futures: Letter from the Secretary of Agriculture Transmitting . . . a Report of the Grain Futures Administration Relative to Extreme Fluctuations in the Price of Wheat during the Early Part of 1925*, 69th Congress, 1st Session, Senate Document No. 135, 1926.

See also *Speculative Transactions in the 1926 May Wheat Future*, by J. W. T. Davel and G. W. Hoffman, U. S. Department of Agriculture, Bulletin No. 1479, 1927. Cf., in general, *Effects of Future Trading: Report of the Federal Trade Commission on the Grain Trade*, Vol. VII, 1926, 419 pp.

unfair or cutthroat competition and on the prevalence of waste and extravagance in its more ordinary manifestations, reliance upon the flawless operation of free competition has been considerably weakened. This is especially true of the marketing machinery in agriculture. Not only in the great mass of the perishable food products but even in the more staple commodities, we meet on all sides inadequate and wasteful methods.²⁰

The marketing problem, while of permanent or long-time importance, is also even more of an emergency or short-time problem than transportation. For, as we have learned above, the failure of marketing costs to keep pace with the lower prices of agricultural products constitutes one of the chief causes of the continued depression and the slowness of the

²⁰ Cf. the conservative conclusions of the *Report of the Federal Trade Commission on the Grain Trade*, Vol. IV, *Middlemen's Profits and Margins*, 1924, pp. 81-82:

"The size of the spreads of terminal as well as of country middlemen and of those for transportation suggest that a reduction at all points would be desirable. . . . Some direct saving to the producer in the spread of the terminal middlemen might be obtained through the development of coöperative commission houses and coöperative terminal elevators, provided a sufficient volume of business is assured them, volume being a highly essential factor in practically all branches of the grain trade, if any decrease in the spread is to be obtained. It also seems reasonable in view of the number of handlings to which grain is subjected that coöperation in the terminal market branches of the grain trade should effect savings both in the number of middlemen handlings and in the transportation cost through shipping grain to its ultimate destination by the shortest routes and most direct channels."

recovery. Marketing costs have not only failed to decrease, but they have increased — in all cases relatively, and in some cases absolutely. The result is a narrowing at each end of the margin between cost and price — rising costs concomitant with falling prices. The marketing situation plays an important rôle in delaying the recovery of the farmer.²¹

The costs of production and of disposition do not exhaust the catalogue of the farmer's outlays. The farmer and his family must live and bridge over the period between the initial process of production and the consummation of his efforts in the sale of the product. Here he becomes in a still broader sense dependent upon others. His clothes, his household furnishings, his comforts, his luxuries and even a part of his food must be bought from others. His profits depend in large measure upon the relation borne by the prices that he has to pay to the prices paid to him. In other words, the third class of cost problems are connected with the costs of living.

(3) *The Costs of Living*

As a matter of fact the problem is an even wider one, because the commodities which he must buy from others are used not only for purposes of consumption but also, as in the case of his tools, his implements and his agricultural machinery, for pur-

²¹ The best book on the subject is still that of my former student L. D. H. Weld, *The Marketing of Farm Products*, 1916.

poses of production. As the problem, however, is essentially the same — that of what he must pay for the goods he buys — we may subsume it under this head of the costs of living, understanding that what is really meant is the cost of securing commodities from the outside.

Apart from the food that he buys, the problem is the one of the relation between agricultural and industrial products. Under normal conditions there is an equilibrium between the level of industrial and of agricultural prices. The two chief points that arise are, on the one hand, the departure from the normal equilibrium caused by great convulsions, and the more gradual influence of a long-continued public policy.

A striking example of the disparity between agricultural and industrial products is afforded by our recent experience. The facts as to the lack of correspondence between what the farmer gets and what he pays for commodities are fairly clear, although they are not susceptible of exact presentation. While great progress has been made in recent years, there is still much to be done before we can hope to have an exact picture of the situation. The technique of the presentation in index numbers is far from perfect. The results differ from scholar to scholar and from government agency to government agency, according to the choice of methods, according to the inclusion or exclusion of different commodities, and

according to a variety of other factors which this is not the place to analyze in detail. On the understanding, however, that the picture is only an approximate one, we present the tables of index numbers that have been issued by the Department of Agriculture, and which are summarized in the following table:

GENERAL TREND OF PRICES AND PURCHASING POWER
(On 5-year base; August, 1909-July, 1914 = 100)

Year	Index numbers of farm prices							Wholesale prices of non-agricultural commodities	Relative purchasing power of farm products in exchange for	
	Grains	Fruits and vegetables	Meat animals	Dairy products	Poultry products	Cotton and cotton seed	All groups 30 items		Wholesale prices of non-agricultural commodities	Retail prices paid by farmers
1910	104	91	103	100	104	113	103	102	101	106
1911	96	106	87	97	91	101	95	96	99	93
1912	106	110	95	103	101	87	99	100	99	99
1913	92	92	108	100	101	97	100	105	95	99
1914	103	100	112	100	105	85	102	97	105	101
1915	120	83	104	98	103	78	100	101	99	95
1916	126	123	120	102	116	119	117	138	85	95
1917	217	202	173	125	157	187	176	182	97	118
1918	226	162	202	152	185	245	200	188	107	112
1919	231	189	206	173	206	247	209	199	105	102
1920	231	249	173	188	222	248	205	241	85	99
1921	112	148	108	148	161	101	116	167	69	75
1922	105	152	113	134	189	156	124	168	74	81
1923	114	136	106	148	145	216	135	171	79	88
1924	129	124	109	134	147	211	134	162	83	87
1925	156	160	139	137	161	177	147	165	89	92
1926	129	189	146	136	156	122	136	161	85	87
1927	128	155	139	138	141	128	131	152	86	85

It will be seen that during the War and the period immediately following, agriculture gained upon industry so that the farmer received relatively more than he gave; but that, on the contrary, after the break came, the situation was reversed and the farmer got relatively less than he gave. In other words, he bought in a dear market and sold in a cheap market. This disparity has gradually decreased until the situation is now again reverting to pre-War conditions. The fundamental reasons for the phenomenon have been touched upon above.

Of considerably more importance, in the public mind at least, is the question as to how far the disparity between industrial and agricultural products is due to such an artificial interference with economic forces as is illustrated by our protective tariff. It is sometimes claimed that a tariff on manufactured articles is always opposed to the best interests of the farmer. The situation, however, is by no means so simple. There have been errors and exaggerations on both sides.

It is often stated, for instance, that the tariff is not inimical to the interests of the farmer because so many of the things that he buys are not subject to the tariff. Many of the articles that he uses, like agricultural machines, automobiles, tools, clocks and the like, it is said, are either not subject to a tariff at all or are commonly exported and therefore not

influenced by the tariff. This argument overlooks the fact that the tariff has indirect as well as direct effects. There is little doubt that the general level of prices within the country is higher than it would be if there were no tariff. For even though particular commodities may not be subject to the tariff, raw materials and labor have so adjusted themselves to the higher-priced tariff-conditioned commodities as to influence the cost and the price of all finished articles. If there were no tariff, the general price level would assuredly be lower.

On the other hand, under normal conditions the farmer receives a compensation for the higher prices that he is compelled to pay in the higher prices that he receives for his own products. The reason why the American farmer has been in the main an upholder of the protective system is because he has been aware of this fact and amenable to the so-called home-market argument. He has believed, and at various stages in our industrial growth he has been justified in believing, that the great development of industry which has been, rightly or wrongly, ascribed in part at least to the protective system has brought with it an increasing demand for his products and has thus helped to maintain his prosperity. This increasing demand comes not only from the industry which needs the raw material, but from the workman whose greater wages spell a higher stand-

ard of life and an invigorated purchasing power. It is only in such cases as cotton where the greater part of the output was exported that the home-market argument played a slight rôle. The reason why the South has been so addicted to free trade is because the southern planter bought in a dear market and sold in a cheap market. It is significant, however, that since the development of the cotton factories in the South, the opposition to industrial protection has very considerably abated.

Under normal conditions, therefore, the American farmer has accepted the protective tariff because of the adjustment between agricultural and industrial prices. But the problem has now assumed more significant proportions. In the first place, as we have learned, there has been a lag in the readjustment of agricultural to industrial prices. Secondly, there are at work, as we know, more permanent forces which tend to favor industry as over against agriculture. While agriculture has undoubtedly been helped by industry, the old-time balance has been disrupted, and the farmer is beginning to consider the problem in the light of what he gives rather than what he gets. From the point of view of costs, the farmer is growing acutely aware of the fact that he is buying in a dear market and selling in a cheap market. The protective tariff, in which, from the very nature of the case, agriculture has been subordinated to in-

dustrial production, is playing its rôle in accentuating the difficulties of the farmer.

The final problem of agricultural costs is connected with taxation. After the farmer has deducted from the price his operating costs, his costs of disposition and his living costs, he has still to consider the amounts that he has to pay to the government. We thus come to the problem of taxation.

(4) *The Costs of Taxation*

In former times the problem of taxation was of comparatively little consequence. The functions of government were restricted and the obligations resting upon the farmer were met in large part by personal exertions, as in the construction of roads. At present, however, the functions of government have kept pace with the growing recognition of the fact that the common wants of individuals are increasing in greater measure than their individual wants. Everywhere the proportion of the social income that is devoted to the upkeep of government has been developing at a progressive rate. The activity of government has gone through the four stages of repression, prevention, amelioration and creation.²² The great example of the two latter classes is seen in this country especially in good roads and in education. Taxation for such purposes at least is

²² Cf. Seligman, *Double Taxation and International Fiscal Cooperation*, 1928, pp. 9 *et seq.*

considered a good investment by the community. It would be fallacious, therefore, to consider taxes simply from the point of view of costs or sacrifices. To the individual farmer, however, who counts his taxes as a defalcation from his gross profits, they may properly be put under the head of costs.

While taxation has been growing hand over fist, the methods of taxation have not kept pace with the changes in economic life. With the development of modern industry and corporate activity, the intangible wealth which we include under the name of personal property has assumed prodigious proportions and the general property tax, which at one time responded to the equities of the situation, has been unavailing to deal with the problem.²³ More and more has intangible personalty slipped out of the assessment lists so that the burden has been progressively borne by real estate. In real estate itself the development has been unfavorable to the farmer. Improvements on the land constitute a larger proportion of the entire real-estate value in cities than in the country. Studies in the incidence of taxation have made it abundantly clear that it is easier to shift the tax on improvements than the tax on land.²⁴ The farmer, therefore, under modern conditions has been bearing a disproportionate burden.

²³ Cf. Seligman, *Essays in Taxation*, 10th ed. (1925), chap. 1.

²⁴ Cf. Seligman, *The Shifting and Incidence of Taxation*, 5th ed., 1927.

This situation has been only partially met by the substitution of income taxation for property taxation. Under the income tax it is easier to reach the profits not alone from personal property but from the present-day professions and occupations which under the property tax do not bear their share of the public burdens. It is significant, however, that it is chiefly the industrial and commercial states which have reacted against the haphazard and monstrous efforts to reach intangible personalty through the listing system or other antiquated devices and which have replaced the property tax by the income tax.²⁵ But even this development is by no means sufficient to solve the tax problem. In the greater part of this country, so far at least as concerns state and local taxation, the farmer still bears a great and an unequal burden. When, as in recent years, rising taxes are found in connection with falling prices, the situation becomes serious in the extreme. In the table on page 121 we see that in the period 1914-27 while farm prices rose from 100 to 145 and the value of farm property rose from 100 to 119, the state and local taxes on farm property rose from 100 to 258.

We have up to this time been considering the difficulties of the farmer connected with problems of cost. We now come to the second series of problems,

²⁵ Cf. Seligman, *The Income Tax*, 2d ed., 1914; *Studies in Public Finance*, 1925, chaps. 10, 11.

adverted to above, which have to deal with problems of price.

b) PROBLEMS OF PRICE

The price problems of the farmer revolve around two main points — instability and depression. The problems, in other words, are those of uncertain price and of low price.

(1) *The Instability of Price*

The first fact which stares us in the face is the uncertainty as to physical output. We have already alluded to this, but it is worth while to dwell upon the actual difficulties somewhat more in detail. The uncertainties as to the physical output in farming operation which are due to natural causes are the results of three great factors: climate, insect pests and disease. Under the head of climate we may put such matters as drought, excessive moisture, floods, hail, frost, hot winds, storms and minor causes such as winter-kill. Under the head of disease we may put the hog cholera, the grain rusts and smuts, the "wild fire" and mosaic in tobacco, all manner of scabs and rots, and such miscellaneous factors as defective seed and the like. Recent investigations²⁶ have brought

²⁶ Cf. *Weather and Agriculture*, written by Messrs. Henry, Kincer, Frankenfeld and Gregg of the Weather Bureau, B. B. Smith of the Bureau of Agricultural Economics and E. N. Munn of the Forest Service, Separate No. 918 from the *Yearbook of Agriculture*, 1924. Cf. also R. L. Nixon, *Weather Damage to Cotton*, Departmental Bulletin No. 1928, 1926.

to light some interesting facts as to the prevalence of these hazards and the resulting insecurity of the farmer. The factors differ in intensity not only from crop to crop, but from area to area and from farm to farm. In the United States as a whole, the most severe hazards in the order of their importance are drought, excessive moisture, frost, insect pests and hot winds. In the case of most crops drought, or deficient moisture, is easily the most important everywhere. After that, the situation differs radically for the various crops. Excessive moisture is the second most important cause of crop damage in corn, oats, rice, tobacco and hay. In wheat and potatoes plant disease is the second most important cause and insect pests the third. In cotton, insect pests and to an overwhelming degree the boll weevil are almost as important as deficient moisture. In barley, hot winds are the second great cause of damage; and so on with each separate crop.

In recent years careful records have been kept for each crop in every part of the country as to the influence of adverse weather conditions as well as of disease and pests. Some pertinent facts are presented in the table on page 149 as indicating the percentage of crop losses in various products for the period 1909-24.²⁷

²⁷ *Crops and Markets*, U. S. Department of Agriculture, *Monthly Supplement*, January, 1926.

It is clear, therefore, that the physical output for each farm, for each crop or for each area of the country varies tremendously and oscillates between complete crop failure and bountiful results. No individual farmer, no class of farmers, no section of the country can tell in advance what the volume of a crop is going to be. The farmer alternates between abundance and scarcity. His insecurity in this respect is the major factor in his economic life. He is exposed to risks which are almost entirely absent in other classes of the community. He has to cope with difficulties that do not exist elsewhere.

The uncertainty of the farmer's physical output is, however, only the beginning of his troubles. Equally important with the quantity that he produces is the

RANGE OF LOSSES AND YIELD

Crop	<i>Range of crop losses (percent)</i>			<i>Range of yield</i>
	Climatic causes	Plant diseases	Insect pests	<i>per acre</i> Bushels
Corn -----	11.3-35.4	.1- .6	1.4- 4.8	23.1- 31.5
Wheat -----	13.0-14.4	.3-12.5	.7- 4.6	12.2- 17.0
Oats -----	12.9-35.4	.8- 5.2	.4- 2.2	23.7- 37.8
Apples -----	15.2-57.7	.8- 5.8	1.9- 5.2	9.9- 25.3 *
Barley -----	8.0-40.7	.2- 8.5	.2- 4.3	20.9- 32.0
Hay -----	8.6-31.9	.0- .2	.3- 1.0	1.14- 1.68 †
Potatoes -----	14.0-33.3	1.3-13.0	1.7- 4.8	80.5-127.0
Cotton -----	13.8-29.2	.2- 4.3	6.5-35.4	124.5-209.2 ‡

* No data available on yields per acre, but since the number of apple trees does not vary widely from year to year, most of this range is the result of changes in yield per tree or acre.

† Tons.

‡ Pounds.

price for which he can sell each unit of the crop. While the uncertainty as to the physical output in its various forms constitutes, so to speak, a connected whole, the uncertainty as to the price per unit depends upon three separate causes. These are: seasonal fluctuations, intra-seasonal fluctuations and cyclical fluctuations.

The seasonal fluctuations are those most intimately connected with the physical output during that particular season or year. If the crop is deficient, prices will rise; if the crop is abundant, prices will fall. The extent, however, to which the prices will change depends of course not alone upon variations of supply but also upon variations of demand. On the whole, however, as we have learned, the variations emanating from changes in supply are more important than those which emanate from the forces affecting demand.

The instability of the seasonal price per unit is accentuated by the influence of the changes in the flow of the commodity to the market, from day to day, from week to week or from month to month within the annual season. These intra-seasonal variations are especially marked in perishable commodities where there may be one day a glut and the next day an almost complete absence of receipts. Even in the more staple commodities there is often a great variation, despite the marketing machinery that is so

commonly found. In the case of wheat, for instance, we not infrequently find variations from week to week or from month to month amounting to as much as fifteen cents a bushel. In other commodities the fluctuations are still more marked.

Finally, we have to add to these seasonal and intra-seasonal variations in the price per unit the increase or decline in prices due to changes in general business conditions. Such changes, sometimes small, sometimes large, are spread over a number of years. They include the results both of the price cycles and of the price trends or so-called secular changes. In so far as these more protracted changes can be foreseen, they fall within the possibilities of individual action, and constitute a part of the practice of farm budgeting, which is making a perceptible even if slow progress.²⁸ While these changes are therefore less extreme, they often serve to emphasize the uncertainties and the difficulties. In a period of generally rising prices the effect of a price deficiency is accentuated; in a period of generally falling prices the effect of an abundant crop is multiplied. When, as during the last few years in the United States, we have had relatively overabundant crops in a period of deflation, the situation is doubly serious.

²⁸ Cf. the interesting study by one of my students, J. B. Hutson, *Farm Budgeting*, Department of Agriculture, Farmers' Bulletin No. 1564, July, 1928.

The uncertainties of the physical output and of the price per unit, over both of which the individual farmer has little if any control, do not yet complete the story. What interests the farmer is the total amount that he receives. The gross income of a farmer is a result of the quantity of his output multiplied by the price per unit. But the combination of these factors is unpredictable because the price per unit depends not so much upon his own physical output as upon that of others. Where the total supply is excessively large, the price per unit of the entire crop may, as we have seen, fall to such an extent that the total gross receipts of that class of farmers as a whole are considerably less than the total cost, thus involving virtually the entire group in a net loss. Farmers as a class are therefore continually torn by conflicting emotions. If they produce less, their total proceeds will evidently be smaller than would otherwise be the case. But if they produce more, the excess production may constitute a surplus which spells disaster to the class as a whole, and which will gradually involve the individual in loss. The farmers are caught between the devil and the deep sea.

The problem of the surplus is, as we have seen above, one of overwhelming importance to the farmer. Especially is this true when, as at the present time, we are going through a period of relative world oversupply. In the former periods of deficit farm-

ing, when population was everywhere pressing upon the food supply, a temporary surplus in any one country could be fairly easily handled. But where, as at present, we have a conjuncture of a world surplus and a domestic surplus, the situation becomes grave in the extreme. In a period like that of the past few years the difficulties of the farmer have therefore become almost insurmountable. The uncertainties of his occupation have led to such an instability of returns in many instances as almost to paralyze, or at all events largely to destroy, his faith and his hope in agriculture as a way of living.

(2) *The Depression of Price*

The final problems which affect the farmer today are those which arise from low price. The low prices of the last few years are to be regarded from both an absolute and a relative point of view. Prices are lower than they were a decade ago partly because of the fall of the price level, partly because of the reduction in demand through the decline of purchasing power abroad, partly because of the greater acreage and of the increased productivity per acre, and partly because of the lag in readjustment.

In addition to this absolute fall, however, the difficulties of the farmer have been accentuated by a still greater relative decrease of prices. It is bad enough to get less; it is doubly galling to get still less than your

neighbor. Agricultural prices have fallen out of gear with industrial prices. This has been due, as we know, partly to the inevitable consequence of natural forces, but it is also owing, in part at least, to artificial causes which have brought about a disparity between costs and returns. If there were no tariff on industrial products the farmer could secure many of his articles, both of production and of consumption, at a lower price; if there were no restrictive immigration law he could secure his farm labor at a cheaper rate; if there were no adherence to outworn methods of taxation he would not have to suffer the unfair burdens which now rest upon him; if credit conditions were as satisfactory in agriculture as in business he could secure his capital more cheaply; if freight rates were so adjusted as to put the emphasis still further upon value than upon bulk, his outlays would be reduced. In these and other ways the normal level of opportunities and conditions as between agriculture and industry has been distorted. The insistent cry of the present-day farmer is to remove this inequality.

The problem of low price is therefore at the center of the whole situation. The farmer not only desires higher prices in themselves, because without higher prices he cannot look forward to endurable living conditions, but he needs higher prices in order to eradicate the feeling of bitterness which is always

engendered by unequal treatment. So far as this inequality is due to natural or world causes for which no one can be held responsible, we may declare his position untenable, however much we may sympathize with him. But to the extent that the causes of inequality are in part at least artificial and man-made, we must not only sympathize but agree with him.

Summing up this chapter, it may be said that the chief difficulties of the present-day farmer are due to excessive costs, to the uncertainty of returns and to the inadequacy of price. In a more general way they may be summed up under the heads of instability and inequality. The causes of the trouble are partly natural and inevitable, partly factitious and remediable. If the difficulty is partly man-made, the remedy may also be declared to be partly under the control of man. Now that we have made however imperfect a diagnosis, it is time to turn to the cure, if there be a cure.

CHAPTER IV
THE POSSIBILITIES AND AGENCIES
OF IMPROVEMENT

THE POSSIBILITIES AND AGENCIES OF IMPROVEMENT

We have discussed the difficulties of the American farmer and have portrayed the chief reasons for his present unsatisfactory situation. Everyone shows a sympathetic interest in his actual plight. All agree in the desirability of some improvement. Moreover, there is a substantial consensus of opinion as to the ideal to be reached. Whether an approach to this ideal is possible and how it should be attempted are of course the difficult problems. Before taking these up, let us recapitulate in a few words some aspects of the ideal consummation.

The American farmer must be preserved and his standard of life be maintained or improved. Living conditions on the farms are sufficiently hard; and although they have their compensations, the attractiveness of the farm is in danger of giving way before the lure of the city life. The farmer must not only be preserved from approaching the status of the European peasant, but he must maintain his position as the fountain head of American energy. He must not only be prevented from slipping down, through the onset of modern business life, into a condition of marked inferiority

to that of other classes, but he must continue to have a full share in the material and spiritual possibilities of modern civilization. In order to attain this ideal, his business environment must be altered in such a way as to eliminate these variations in the value of money which spell disaster to agriculture as to all industry. Credit must be available in far larger measure for the various types of utilization to which it may be applied in agriculture. The uncertainties in connection with the physical output must be made to disappear, so as to stabilize the income of the farmer. The prices of farm products must be steadied and regularized so as to eliminate what is today one of the chief causes of his troubles. The income of the farmer must be raised to a higher level, either by lowering the cost of production or by raising the prices of farm products or by a combination of the two methods. Finally, the position of the farmer must be brought into line with that of the other classes in the community, so as to reduce the disparity between them and to remove all feelings of bitterness.

There are but few who would deny that these objectives represent a desirable ideal. Unfortunately, however, each step in the direction of attaining this ideal is open to discussion and is accompanied by the most vehement disagreements of opinion.

The first point in considering the possibility of

improving conditions is to observe the distinctions that we have drawn between the various classes of problems.

1. THE LONG-TIME AND THE EMERGENCY PROBLEMS

So far as the long-time problems are concerned, there is relatively little that can be done by any agency in any one country. We have to deal here with those more fundamental relations between man and nature which enforce the conclusions that, despite all efforts which have been or can be made in subjecting matter to mind, human beings are at bottom the playthings of the more subtle forces that shape the universe. Even, however, if something within measure can be done to attenuate the dependence of the individual upon the universe, any real and far-reaching influence is more or less intimately bound up with the combined efforts of all human beings. We often use the term "world forces" in the erroneous sense of forces affecting our own earth — that infinitesimal speck in the infinite world. But even in this sense the lasting conditions of economic life are inextricably bound up with forces that transcend any country or any continent. Until the time — still far removed — arrives when the purposeful activity of human beings will be directed by world considerations and world agencies, we may as well abandon the thought of attempting to bring about

any fundamental change, whether in agriculture or in anything else. With the play of world economic forces uncontrolled by any world agencies, we shall be compelled very largely to let things drift. About the only thing that can be done in reference to the long-time problems of agriculture is for each country to coöperate with all the others in the attempt to modify here and there the play of these greater forces. In this effort we have made only the faintest beginnings: the American attitude to the League of Nations is an indication of the difficulties to be overcome. What is to come to American agriculture in the fullness of time will come. It is futile to speculate upon the ultimate outcome. Any puny effort that is made in any particular country separately and independently to affect the world forces may be eliminated from consideration.

Quite different, however, is the relatively short-time problem, where something at least can be done to affect the situation of agriculture for the next few decades or for the next generation or two. Here the possibilities of change are more pronounced and it is feasible, if not to frustrate, at least to impede for a time the working out of the world forces. All economic action consists of the way in which human beings respond to each other in their control of the forces of nature. Economic life depends upon human behavior and human responses; and while, indeed,

the fundamental reactions of human beings are the results of a slow evolution, it is always possible to modify in more or less important particulars these relations of human beings to each other. The relatively short-time problems of agriculture, as of all economic life, are more or less amenable to the efforts of human beings themselves.

When we come finally to the emergency problems, we are dealing both with greater possibilities and with greater actualities. Life is made up of emergencies. Something is continually happening which calls for immediate decision, and our choice of action in a particular eventuality will largely determine the immediate result. Practical politics are composed to a great extent of such immediate choices. A temporary remedy in medical as in economic life is generally not only more simple but more urgent. If we are able to transcend the immediate difficulties of the present, we may look at the future with somewhat more equanimity.

The wise statesman, like the wise physician, will of course always have in mind the more distant consequences of an immediate action. At any given time, however, immediate action may be more important than the elaboration of a more protracted and more lasting program. The emergency problems are often those which require a more instant solution.

If, then, the possibility of improving the situation of agriculture is to be considered in its temporary, its more protracted and its ultimate aspects, and if both the practicability and the need of action increase as we move from long-time to emergency problems, we may concede both the need and the possibility of some action. Temporary or permanent improvement is at least possible if appropriate and wise action is taken by human beings. A policy of despair is not legitimate. To the extent that the relations of human beings and their contest with nature depend upon human beings themselves, there is a possibility of our improving ourselves. If, however, the problems of the farmer are susceptible, in part at least, of a solution, and if agricultural conditions can be improved, the next question is as to the agencies of improvement. To this we shall now address ourselves.

2. THE AGENCIES OF IMPROVEMENT

There are only three ways in which human beings ordinarily attempt to better their condition. They may seek to attain results by their own unaided actions; they may seek to join others in achieving ends which transcend the possibility of unaided and separate efforts; they may create organizations of a more comprehensive kind, of which the state is an example. As over against the individual, there are

two forms of joint activity: the union of individuals with each other in all kinds of groups and associations, and the combination of individuals in the more wide-flung and authoritative organization that we call the state, where public replaces private activity. The three possible agencies of improvement are therefore individual action, coöperative action and government or political action.

Each of these has its rôle to perform in the problems that confront us.

a) THE INDIVIDUAL

The individual farmer can do not a little to improve his situation. As in every other domain of life, his success is contingent in no small degree upon his efficiency. In economics, as in warfare, much depends upon the man behind the gun. In agriculture as everywhere else, there is the same difference between courage and timidity, between efficiency and incompetence, between frugality and extravagance. Even in the crisis through which we have been passing, there have been individual farmers who have been prosperous and who have been able to earn money while their fellows have lost. In an interesting recent book¹ we are told the story of a farmer who had been roused from the lethargy of routine by some suggestions of an agricultural lecturer and

¹ *Harvey Baum: A Study of the Agricultural Revolution*, by E. S. Mead and B. Ostrolenk, Philadelphia, 1928.

who, by dint of applying the improved methods of modern scientific and business life, marked himself off from his neighbors in such a way as to make large profits, whereas they continued to lose. It goes without saying that if every farmer had as much intelligence and initiative as Harvey Baum, there would be almost no agricultural problems.

This is, however, no solution, for the reason that farmers, like all other classes, comprise the intelligent and the stupid, the efficient and the careless, the good and the bad. The agricultural problem is a problem of the average farmer. To say that the solution of the farm problem is to be found in more intelligence and more ability is to say little. We can indeed raise the general standard of agricultural efficiency; but to raise that standard we must have prosperity. We thus move in a vicious circle.

Short of the transformation of the farmer from an ordinary man to a superman, there are nevertheless particular ways in which he can improve his lot by reducing his costs.

It is sometimes said that the chief possibility of reducing costs is through the large-scale operations like those which have transformed industry. As to this, there is indeed no doubt that under certain conditions large-scale farming, with the increasing use of machinery, will often achieve beneficial results. Some of the most successful experiments of

recent years in both the West and the South are due to the agricultural corporations or the far-seeing individuals who are carrying on farming on modern business principles. As over against this consideration, however, we must remember several things. Many of the bonanza farms of a generation ago were abandoned as unprofitable and were subsequently divided into smaller areas. Moreover, there are huge sections of this country, especially in the South, where the ordinary relations of owner and tenant and the system of crop sharing militate against farming on a large scale. Finally and most important, the typical farmer refuses to sink his individuality and to become a mere cog in a huge wheel. If there is any one thing that he desires, it is to be preserved from the transition that has overtaken his fellow in industry, through which the independent artisan has become a factory hand. The future may indeed have such a transition in store, whereby capitalist farming will take its place side by side with capitalist industry. From almost every point of view, however, the American farmer regards this prospect of large-scale farming with suspicion. Large-scale farming may improve the condition of agriculture, but not the condition of the farmer. It would mean the disappearance of the typical American farmer.

Moreover, we must not forget that one phase of

capitalist farming is moving in the opposite direction. As population increases, extensive agriculture inevitably gives way to intensive cultivation. The proximity of large cities calls into existence the truck farm and the dairy agriculture, which depend to a far larger degree upon the efforts of the individual. In certain phases of even this movement, there is indeed room for large-scale, corporate agricultural organizations. But for the immediate future, at least, the tendency seems to be in the other direction.

Even though the individual may therefore exert some influence upon his own prosperity, and even though success is associated with the proper choice of opportunities and the display of initiative, energy and efficiency, it remains true, as we have seen, that the individual frequently finds himself helpless in the face of a situation that seems to transcend all possibilities of individual action. It is this fact that had led to the associated or joint action involved in agricultural coöperation.

b) THE COOPERATIVE

The coöperative movement has had an interesting history. Its beginnings were due to the teachings of Robert Owen, while the theory of coöperative or socialized effort was developed by the early French Socialists. In permanent practice, coöperation dates from the band of consumers known as the Rochdale

Pioneers, in 1844. It was only after a considerable period that the idea was applied to production. Apart from the few community experiments in the United States, the origin of farmers' coöperation for production is to be found in France and Scandinavia. A little later, the movement spread so as to include coöperative credit facilities, especially in Germany and Italy.

On the American continent the movement came later. While the experiments with coöperation succeeded fairly well in Canada, the peculiar psychology of the American farmer, with his pronounced individualism and his general prosperity, rendered the path of the coöperatives a more thorny one. Most of the earlier attempts, even on a small scale, met with failure, and it is only in the last decade or two that we find a more energetic attempt made to develop coöperative activities.

The total number of agricultural associations in the United States in 1925 has been estimated at about 69,000, clasified into five groups as follows: educational associations, 5,000; production associations (seed-improvement, cow-testing, bull ownership, stallion ownership, calf clubs and pig clubs), 6,000; credit and insurance associations, 7,000; public utilities (telephone, water, light, power transportation), 40,000; marketing and purchasing associations,

10,800. It is the last class which are generally called coöperatives.²

² Among the more important of the recent publications of the U. S. Department of Agriculture on coöperative associations may be mentioned the following:

Sales Methods and Policies of a Growers' National Marketing Agency, by Asher Hobson, Bulletin No. 1109, 1923;

Coöperative Marketing of Cotton, by George O. Catlin, Bulletin No. 1392, 1926;

Management Problems of Cooperative Associations: Marketing Fruits and Vegetables, by A. W. McKay and W. J. Kuhrt, Bulletin No. 1414, 1926;

The Staple Cotton Cooperative Association, by A. W. Swarthout, Dept. Circular No. 97, 1926;

Business Set-up in a Coöperative Marketing Association, by C. L. Christensen, Dept. Circular No. 403, 1926;

Membership Relations of Coöperative Associations (Cotton and Tobacco), by J. W. Jones and O. B. Jesness, Dept. Circular No. 407, 1927;

Coöperative Marketing of Livestock in the United States by Terminal Associations, by C. J. Randell, Technical Bulletin No. 57, 1928.

The results of the nation-wide survey of 1925 were published as *Agricultural Coöperative Associations, Marketing and Purchasing*, by R. H. Elsworth, Technical Bulletin No. 40, 1928. The most complete report is the recent voluminous publication: *Coöperative Marketing, Letter of Submittal from the Chairman of the Federal Trade Commission*, 1928, 721 pages.

An excellent bibliography is *Coöperation in Agriculture: A Selected and Annotated Reading List with Special Reference to Purchasing, Market and Credit*, compiled by Chastina Gardner, 1927, Miscellaneous Circular, Department of Agriculture, v. 97.

For foreign countries, good recent accounts are found in C. L. Christensen, *Agricultural Coöperation in Denmark*, Bulletin No. 1266, Department of Agriculture, 1924; *The Coöperative Movement in Soviet Russia*, International Labor Office, Geneva, 1925; E. A. Lloyd, *The Coöperative Movement in Italy*, London, 1925; K. Ogata, *The Coöperative Movement in Japan*, London, 1923.

There have been two nation-wide surveys—1915 and 1925. The rapid growth is shown in the following table.³

COOPERATIVE ASSOCIATIONS IN THE UNITED STATES

COMMODITY	1913		1915			1925		
	Number	Business (in millions)	Number	Members (in thousands)	Business (in millions)	Number	Members (in thousands)	Business (in millions)
Grain products ----	960	\$131	1637	167	\$290	3338	520	\$ 170
Dairy products ----	1187	60	1708	141	89	2197	460	535
Livestock -----	44	5	96	13	6	1770	400	320
Fruits and vegetables	456	70	871	110	202	1237	180	230
Stores -----	111	6	275	60	12	1217	247	135
Cotton -----	79	15	213	18	2	121	300	150
Tobacco -----	18	3	43	18	6	24	300	90
All others -----	244	22	581	125	30	899	293	140
Total -----	3099	\$310	5424	651	\$636	10803	2700	\$2400

In the last survey about 73 percent of all the co-operatives were found in the twelve North Central States, with Minnesota, Iowa, Illinois, Wisconsin, California and Michigan leading.

³ The estimates of membership and business transacted are probably a little too high. The estimates are based on the averages obtained from reporting associations. The "reporting" unit is not the normal or representative for the country as a whole, since the oldest and soundest, rather than the weaker, organizations usually make the reports. Moreover, the averages for the reporting associations have not been corrected for variations as to size, group or geographical location.

In 1925 there were about two hundred large-scale organizations, fifty being federations dealing with dairy products, fruits and vegetables, located primarily in California, New York, Florida and Minnesota. Outside of the federations there were seventy-four centralized organizations—fifteen each dealing in cotton and wheat; ten in poultry; eight each in wool, fruits and vegetables; and seven in tobacco. The number of sales agencies in the terminal markets was twenty-five.

The estimated total membership was 2,700,000; but deducting membership in two or more associations, the number of farmers served through the coöperatives was 1,800,000. The estimated business was \$2,400,000,000, of which 31.2 percent was accounted for by the grain associations, 22.3 percent by the dairy associations, 13.3 percent by the livestock associations, 11.7 percent by fruit and vegetable associations, and 10 percent each by cotton and tobacco associations.

At the present time (1928) the membership is estimated at about three million, and the number of farmers actually served at about two million.

In recent years, therefore, not a little has been accomplished. Much, however, still remains to be achieved.

If we survey the modern coöperative movement, we find that its activities cover a wide field. The

farmers have associated themselves with each other, at first in small and compact local groups, primarily with a view to improving the marketing facilities. It is largely in the more perishable products, as fruits, vegetables and dairy products, that this development has been most marked. There are several stages in the marketing process which lend themselves to such efforts.

In the first place, it is often desirable that the products move forward in large shipments of not less than carload lots. It is true that in many cases this is accomplished by the local dealers, but the risk is frequently so great that a large prospective profit seems necessary in order to overcome the possible losses. Where the service of the intermediate dealers thus becomes unduly expensive, this assembling of the product can best be done by a coöperative.

In the next place, such products are generally forwarded to the wholesale commission merchants. It is manifestly out of the question for the individual producer to accompany his products to the market. A group of producers in a coöperative can better afford to take the measures which are calculated to enable their shipments to fetch the best prices. It not infrequently happens that through the union of small coöperatives into larger groups this end can be still more successfully achieved. Exam-

ples of what can be accomplished in this way are afforded by the Danish coöperatives in the dairy industry and by the California Fruit Growers' Association in this country. To the extent, however, that the producers of any given group are widely scattered, the conditions of such successful operation of a coöperative become more complex.

It is not only on the more technical side of marketing operations that coöperatives find an effective sphere of operations. In the case of vegetables, arrangements have often been made with success for the canning of the surplus in the case of an abundant crop and for its holding over to a later date. Another way in which the coöperatives have often proved their effectiveness is in the matter of standardization and grading of the products, so as to insure to the producers of the better varieties a more adequate return for their skill and efficiency. In many other details of the marketing process, such as advertising, the coöperatives have shown their worth.

While, however, the chief function of the coöperatives is thus to be found in the field of distribution, not a little has also been accomplished in the domains of production and of consumption. In the United States as elsewhere, coöperation not infrequently plays a significant part in initiating the growing of new crops. In the securing of seed or stock, in the obtaining of certain kinds of specialized machinery

in the purchase of fertilizers, in the buying of crates, in the hiring of laborers and in a multitude of other phases of production, we find that the coöperatives have often been of great service. Even in the field of consumption not a few coöperatives have aided the farmers or their wives in purchasing at wholesale rates the commodities which are utilized in their daily life.

Sometimes the coöperatives go a step further and attempt not only to secure economies through combined action but also to exert a stabilizing influence on the price, by dealing in a larger way with adjusting the supply to the demand. This is found also in the staple crops. Perhaps the best illustration of what can be accomplished along these lines is afforded by the recent activity of the Canadian Wheat Pool. This has been in existence for several years and in its national and comprehensive scope has been the outgrowth of several decades of slow and patient development from the local coöperative associations. It is true that the experience of the Canadian Wheat Pool is not yet of a definitive character, because of the exceptionally favorable conditions under which it has been operating; moreover, severe criticism has not been lacking, directed against the Pool by the various classes of middlemen whose activities have been curtailed by its operations. In the main, however, the Pool has approved itself to the great mass

of Canadian wheat farmers, and the general testimony is to the effect that it is responsible for a marked improvement not only in their profits but in their morale. By dealing on a large scale, by practicing extensive operations with great caution and ability, the managers of the Canadian Wheat Pool have undoubtedly succeeded in attaining noteworthy results.⁴

In the United States the success of the pools has been less pronounced, partly because of the comparative novelty of the experiments and partly because of the fact that in wheat at least there is such a difference of grade between the winter and the spring, the hard and the soft varieties, such a diversity of soil and such a lack of compactness and unity as to make the situation far more complex. But even in the United States there have been not a few exam-

⁴ The literature of the Canadian wheat pools is enormous. Each one of the three pools — the Alberta, the Saskatchewan and the Manitoba Coöperative Wheat Producers, Ltd. — publishes annual reports, many leaflets and historical documents. The Joint Association, known as the Canadian Coöperative Wheat Producers, Ltd., does the same. Among the great mass of secondary material there might be especially mentioned the report of the U. S. Department of Agriculture on *Cooperative Marketing of Corn in Western Canada*, by J. F. Booth, Technical Bulletin No. 63, 1928. Among the books might be mentioned: *Agricultural Coöperation in Western Canada*, by W. A. Mackintosh, Kingston, 1924; supplemented by the same author's *The Canadian Wheat Pools*, Kingston, 1925; and *Grain Growers' Coöperation in Western Canada*, by Harald S. Patton, Harvard University Press, 1928.

ples where coöperatives have achieved fair success in stabilizing existing conditions.

In some cases, however, the coöperatives have attempted to do still more. Instead of limiting their operations to the improvement of marketing conditions within the general framework of the existing price situation, they have sometimes attempted to alter the more fundamental price conditions in order to secure a higher level of return for their members. The difficulty in the way of achieving success along these lines is a double one.

In the first place, in order to exert any real influence on the price, there must be a virtual control of a large part, if not of the whole, of the supply. This often calls for immense sums which ordinarily transcend the ability of the coöperatives. Secondly, it requires a control over virtually all the producers or at least over the complete output of the members of the coöperative. The difficulty here is that the outsider who does not belong to the coöperative is enabled to secure the benefits of the higher price without subjecting himself to the obligations of membership. Again, it not infrequently happens that the members of the coöperatives who have pooled a part of their output subsequently find an advantage in disposing of the rest of their crop in some other way.

The difficulties of this voluntary or partial co-operation have been met in certain countries by

compulsory coöperation. This assumes two forms. In some cases, as in the Canadian Wheat Pool, the method of contracts has become customary. Under this system the individual farmer enters into a contract obligating himself to sell to the Pool for a period of years, ordinarily five in number, the whole of his output. If he breaks or evades this obligation, he is mulcted in severe penalties. In other countries, as in some of the Australian coöperatives or pools, it is provided by law that if a certain proportion, commonly 75 percent, of the members of any group decide to proceed with the project, the actions of the organization shall be binding upon the remaining 25 percent.

In the United States voluntary coöperation has made such slow progress that the time has in all probability not yet come, if it ever will come, to apply either of these methods of compulsion which are found in other parts of the Anglo-Saxon world. As long, however, as we have to depend upon purely voluntary action the difficulties of controlling the level of prices become almost insuperable.

The third reason which militates against the effort of the coöperative to control prices is found in the fact that it almost necessarily deals with some particular product and that any success in raising prices will inevitably lead to an increase of output on the part either of the members themselves or of the out-

siders. With the increase of supply, however, the market is likely to break and the final result would then be a lowering of price with all of its consequent disasters. The way in which success thus leads to failure is illustrated by the experiences of the Burley Tobacco Pool a few years ago. Prices were for a time raised considerably and prosperity seemed to reign. Inasmuch, however, as not a few growers had for various reasons deemed it inadvisable to join, those on the outside soon found that they profited more than those on the inside; and as a natural consequence those on the inside hastened to get on the outside. The Pool collapsed, prices fell with a thud and the entire coöperative movement in that section suffered a setback. It is significant that the Canadian Wheat Pool has made no such efforts.

It is clear, therefore, that we must regard not only the possibilities but the limitations of agricultural coöperation. Coöperation has played an important rôle in solving certain types of problems for certain groups of farmers. There are numerous products and areas in the United States where there is a wide and fruitful field open for coöperation. But the history of coöperation in the United States discloses two well-defined limitations. In the first place, coöperation is a tender plant. In a country so addicted to individualism, the lesson of coöperation must be learned by local groups in a slow and gradual

fashion. The advantages of subordinating individual to group activity can not be learned over night. The larger and the more centralized the coöperative activities, the greater will be the obstacles put into their path not only from within but from without. The coöperative movement can best be built up from below, and the attempt to reverse the progress, such as has been exemplified by the recent Sapiro experiments, has been seen to be premature.

In the second place, the fact that the coöperatives must for a time be relatively small renders them unfitted for dealing in a large way with the more fundamental problems that lie at the basis of farm relief in this country. Success has come in the United States to those coöperatives which have attempted to secure specific benefits for particular groups. Failure has attended those coöperatives which have endeavored to bring about for their members the far more difficult improvement in the general price level through handling the surplus, through controlling the production, through attacking the problem of price oscillation. While, therefore, the coöperatives doubtless have a growing field of activity in the future, there is needed for the accomplishment of these larger tasks a stronger organization and a more powerful machinery under whose authority costs as well as benefits may be distributed among the producers in each particular crop.⁵

⁵ The views set forth above have been confirmed by the conclusions

It is clear, accordingly, that while both individual action and voluntary group action in the form of coöperatives have definite functions to perform, each is inadequate to meet the underlying difficulties of the situation. To accomplish this we need the third of the remedial agencies to which attention has been called above, namely the state itself, through its accredited agents. We thus come to the functions of government as the chief agency in farm relief.

c) THE GOVERNMENT

As a preliminary to this discussion, however, we must consider two queries: first, can government do anything at all in the premises; and second, if so, which agency of government is it upon which we can rely?

On the question of the possibilities of governmental interference there have always been two extremes. On the one hand, there are those who believe that government can do everything, and on the other, those who believe that government can do nothing. Of the Chairman of the Federal Trade Commission, in the recent report mentioned above, p. 170: "It is recognized that the principle of coöperation, as applied to the organization and operation of the local organizations, has resulted in much good in a limited way to the producers of farm products, though it has not functioned to any marked degree in the matter of orderly marketing or in the determination of the price returned to the producer. On the other hand, it is also recognized that the large-scale coöperative marketing movement, which is engaging the attention not only of the producer but of the public at the present time, is in an experimental and evolutionary stage." *Coöperative Marketing, Letter of Submittal from the Chairman of the Federal Trade Commission, 1928, p. lvii.*

the other, those who believe that government can do nothing. Some think that government is omnipotent; some that government is impotent.

The fallacy of the first class of thinkers is obvious. In the first place, the mere enactment of a law does not necessarily signify its enforcement. A law states that such and such things shall be done; but it is individuals who are to do or to refrain from doing. Whether they will accommodate themselves to the provisions of the law depends in fact upon the degree of compulsion exerted by the government. This again depends at bottom upon public opinion. If the provisions of a law encounter a decided reluctance on the part of public opinion, the law will not be observed.

Even if public opinion supports the law, it may be uninstructed or inadequately acquainted with the inclinations of individuals to prefer their own advantage to that of the community. This is what is ordinarily meant by saying that a given statute violates economic law. An economic law explains how individuals usually respond to economic facts. If the statute does not change the facts, it is likely in the long run to be ineffective.

It is plain, therefore, that government cannot accomplish everything. Its field of action is necessarily limited.

Equally erroneous, however, is the position of

those who contend that government can do nothing. For after all, economic life depends upon the way that individuals respond to economic facts; and if there is a sufficiently strong public opinion behind the statute, there may be brought about a change in the behavior of human beings. Indeed, civilization itself is a result of change not only in the outward facts but in the responses of human beings to these facts.

In this contest between inaction and action there has been a constant oscillation. At certain periods government has done much, at others it has done little. This is true not only of the institutions, but of the theories. After a period of great interference by government, there developed the theory of inaction known as *laissez-faire*; after a period of comparative inaction and failure to achieve desired results, there has come a more positive theory culminating in socialism. In truth, however, we rarely find in practice either thoroughgoing socialism or complete *laissez-faire*. At the very time when the theory of *laissez-faire* developed in Great Britain, we find distinct attempts of government to control various phases of economic life. The adoption of free trade in England was accompanied by the enactment of factory laws.

While it is folly, therefore, to believe that government can do everything or that mere political fiat can alter the fundamental nature of man, there remains,

on the other hand, a field — restricted, indeed, but nevertheless of some significance — within which government can modify, even if it cannot completely alter, the forces that control economic life. What is needed is not so much abstract pronouncements on the legitimacy of government interference as an analysis of the particular way in which any given form of government action may be expected to alter either the facts of economic life or the behavior of human beings in their relation to these facts.

If, then, individual and coöperative action is inadequate to deal with our problem, and if we have to depend to a certain extent at least upon government, the next question is as to the choice of the proper governmental agency. In the United States this question resolves itself into the alternative between the state and the nation. There are certain fields, indeed, in which the state and local governments impinge directly upon the prosperity of the farmer. This is especially true in the domain of taxation, and somewhat less important in a few other fields. In the main, however, there are definite limitations upon the effectiveness of state action. These consist in the lack of uniformity as among the different states; in the absence of a sufficiently unified power of control; and in the inability to secure a wide distribution of the risks involved. We must also not overlook the occasional unwillingness

of the smaller area to make its action conform to the best interests of the larger community. Local self-government, with all its admirable features, has not infrequently shown a tendency to selfishness and to a disregard of the wider considerations. Just as the individual learns only slowly to conform his actions to the advantages of the group, so the states sometimes prefer their own welfare to that of the whole.

It follows that if we are to have government action at all, it must be, in most instances, primarily through the display of national power. The federal government is the only agency which can deal effectively with the situation as a whole. What it may be expected to achieve will form the subject of the next chapter.

CHAPTER V

A PROGRAM FOR FARM RELIEF

A PROGRAM FOR FARM RELIEF

If, then, we inquire what the national government can do for agriculture, we must at the outset remember our classification into world and domestic problems; we need, moreover, again to divide the latter class into two categories: government action which affects agriculture only incidentally, as contrasted with the action that deals with agriculture more directly. In other words, we have to consider a general governmental policy, affecting agriculture among other things, as well as a special farm policy influencing agriculture in particular. A program of government farm relief must be built partly upon general legislation and partly on specific effort.

1. INTERNATIONAL COOPERATION

In so far as agriculture is affected by world conditions, it is clear that the most important phase of government activity must be devoted to the elimination or diminution of war. The fundamental difficulty into which American agriculture has recently been plunged is, as we have learned, due primarily to the aftermath of the War. If we wish to prevent a repetition of such a situation, we must bend all our energies to render impossible the recurrence of war.

If the farmer really knew his own interests, he, more than almost any other class in the community, would abandon the old-time policy of national isolation. He would realize that it is impossible for our country today to practice the policy of aloofness with any hope of success. He would learn the lesson of the World War and would appreciate the fact that, whatever be the political constellation, it is impossible for him to avoid being implicated in the nexus of world forces. The farmer, if he correctly estimated his own position, would today become the chief advocate of a close association of his country with the other nations of the world, in the endeavor to create a political basis for common economic action.

Furthermore, not only would a government, solicitous of the interests of the farmers, abandon the present policy of "splendid" isolation but it would take a very different attitude to some of the problems bequeathed to us by the War. If, as we have seen, one of the causes of the recent difficulty was the falling off in the European demand, a government really mindful of the prosperity of the farmer would do everything in its power to restore as rapidly as possible the foreign purchasing power. This would mean, among other things, a different attitude of government toward the question of the allied debts. A notable consideration in that question is not so

much what Europe can afford to pay as what we can afford to receive. Inasmuch as our exports are still so largely composed of agricultural products, our insistence on the repayment of the allied debts reduces to that extent the ability of Europe to relieve us of those commodities. A government intelligently devoted to the best interest of the farmers would reconsider our whole attitude on the allied debts.

The second possibility of government action designed to influence the operation of world causes affecting agriculture is concerned with the changes in the general price level. In the case just discussed, the difficulties emanate primarily from influences affecting commodities and chiefly from the dislocation of production and consumption engendered by the War. In this case the principal difficulty is ascribable to the conditions of the money supply, in the broadest sense of the term. The objective there is a more stable purchasing power, the aim here is the creation of a more stable money. To this problem statesmen and economists have of recent years been addressing their best efforts.¹ While no definite solution is yet in sight, it may be said that, inasmuch as the difficulties arise from world causes, the solution must ultimately be sought in world coöperation.

In fact, we even now notice the beginnings of such

¹ A good recent review is Joseph Stagg Lawrence, *Stabilization of Prices: A Critical Study of the Various Plans Proposed for Stabilization*, New York, 1928.

coöperation in the field of banking. Since the United States has become the chief custodian of the gold supplies of the world and is now to an increasing extent the creditor nation of the world, the federal reserve banks have begun to realize the responsibility that rests upon them and have been giving some attention to the attempt to preserve, as far as within them lies, a more stable level of prices. Through their discount policy and their open-market purchases, they have commenced to exert such an influence. What is more to the point, they have learned the desirability of at least an incipient coöperation with the banking systems of Europe in order to prevent sudden fluctuations of the price level. To the extent that our currency affairs are successfully handled, agriculture, like every other form of business, will benefit.

Thus in the fields both of the avoidance of the cataclysm of war, as well as of the stabilization of the world's currencies, the government of the United States has significant tasks to perform.

When we leave the world arena and come to consider the more particularly domestic problems in the solution of which government can play a rôle, it is possible to classify the government functions under four heads. These might be specified as the functions of regulation, of equalization, of education and of price modification.

The function of regulation has reference to those external agencies that materially affect the position of the farmer. It would comprise the attempt to deal with speculation; with the charges and practices of the elevators, warehouses and exchanges; and, above all, with the various media of transportation. This function would be a part of the general regulative activity of government that has been engendered by the complications of our modern capitalist economy.

The function of equalization has reference to the duty of government to overcome or to lessen the discrimination that has developed between agriculture and the other phases of national life. Under this head we might include credit, taxation and the tariff.

In education we might put such activities as would aid the farmer to help himself. These would include spread of information and advice which would come from further research on the part of the government authorities on almost every point that affects the life of the farmer. They would comprise such matters as the collection and dissemination of the pertinent statistics; the effort to introduce a proper classification of lands for arable, grazing or forestry purposes; and all those points where the increasing knowledge of the expert might be made available to the individual farmer.

The fourth function, that of price modification, has

to deal with the effort to modify or to influence the more basic factors of agricultural prices.

These four functions may, as has just been stated, be divided into two categories, the one reflecting the attitude of government in general toward the economic life of the community as a whole, with only incidental regard for agriculture; the other representing a series of activities designed more particularly to assist the farmer. If we regard the problem from this angle, it will be found that the functions of regulation and equalization fall within the first category, and those of education and price modification within the second category. They are both parts of a general farm program, but they differ in that the one category has to deal with the general functions and agencies of government, while the other is concerned with the more specifically agricultural functions or agencies. Although government has already accomplished not a little in all these matters, the lack of a comprehensive program has precluded entirely adequate achievements.

Let us take up these various objectives, dealing first with regulation and equalization, and then with education and price modification.

2. THE FUNCTION OF REGULATION

While much might be said on the various phases of this problem, we shall limit ourselves here to organized speculation and transportation.

a) SPECULATION

So far as concerns the regulation of speculation, the problem is common to industry and agriculture. Although there is still a difference of opinion, expert judgment is coming to the conclusion that in the solution of this problem more can on the whole be expected from the action of the exchanges themselves. Recent years have witnessed a great improvement in the conduct of the exchanges and in their control over the activities of their members. Moreover, reasons to which we have alluded above have contributed largely to diminish the abuses on the stock exchanges. A long experience has brought even those who are sometimes unfavorably affected by the activities of the produce exchanges to a realization of the essential need of normal speculation as itself a stabilizing force. The functions of government in this respect seem to lie rather in the cautious development of such methods as are already in part embodied in the Grain Futures and Cotton Futures Acts. Government through its various special agencies can usefully attempt to minimize the dangers of an excessive manipulation of prices.

b) TRANSPORTATION

Of more importance than speculation is transportation. This is of particular significance in the United States because of the vast area of the country and the distance that has to be traversed by many agri-

cultural products in reaching the market. There are two important branches of this problem — transportation by land and by water. The first category may again be subdivided into the utilization of the common roads and that of the railroads.

The development of good roads is of chief concern in the short haul. This needs only a mention because, thanks to the introduction of the automobile, it is proceeding apace in this country. The farmer, like every other class, is destined to benefit more and more from this improvement. The difficulty here consists in the fact that the roads have to be paid for, and that the farmer obviously must stand his share of the burden. The problem of good roads, in other words, resolves itself into that of government finance and taxation and, as such, can properly be considered a little later.

When we come to railroad transportation we are confronted by the irony of a situation whereby freight rates have been rising while agricultural prices have been falling. The problem is a difficult one because, as we have pointed out, the farmer is vitally interested in the efficiency of the railroads, which in turn depends largely upon the adequacy of freight rates. The Interstate Commerce Commission has grappled manfully with the complexities of the situation, but has perhaps not given adequate consideration to the emergency problem. When the

Joint Commission of 1921 considered the matter, they came to the conclusion that the situation called for an immediate lowering of the agricultural class rates and that the changes which had been recently approved had caused a dislocation in the relationship between agricultural and industrial products.² Although the conditions found by the Commission have not materially changed in the six years that have

² The recommendations are as follows:

“1. That the transportation rates on many commodities, more especially the products of agriculture, bear a disproportionate relation to the prices of such commodities; that there should be immediate reductions in transportation rates applied to farm products and other basic commodities; and that reductions in rates upon the articles of higher value, or upon tonnage moving upon so-called ‘class rates,’ are not warranted, while the rates upon agricultural products and other basic commodities remain at their existing levels; that greater consideration should be given in the future by public rate-making authorities and by the railroads in the making of transportation rates to the relative value of commodities and existing and prospective economic conditions.

“2. That the pyramided per cent advances in rates which have been authorized by the Interstate Commerce Commission or made by the United States Railroad Administration caused the dislocation of long-standing rate relationships between rates upon agricultural and industrial products between competitive enterprises and competitive sections of the country; that the railroads and the public rate-making bodies should seek to readjust rates of the country so as to preserve so far as practicable the general relationship of rates existing prior to 1918, with due regard to present and future changes in economic conditions.

“3. That in establishing the general level of rates and commodity and class rates the Federal and State regulatory bodies give greater consideration to existing and prospective economic conditions and to the relationships existing between the price level of commodities and

intervened, nothing has been done, largely as a result of the opposition of the industrial interests. The situation assuredly cries for a remedy.

The difficulty, as we have pointed out, is to be found partly in the general freight structure which has been built up in this country. In the controversy that has been carried on among railway experts as to the relative desirability of the principle of cost of service as over against that of value of service, the advocates of the former have been gradually exerting the larger influence on the Interstate Commerce Commission. The emphasis put upon cost or tonnage, however, works out in a system of rates relatively unfavorable to agriculture. It might be hazardous to say that we need, on the contrary, a far greater application of the principle of value. For an extreme application of that principle would not only arouse the opposition of the industrial interests of this country but would also interfere with the prosperity of those railroads that now depend largely upon agriculture for their traffic.

As regards the last point, indeed, it might be pointed out that the opposition between the agricultural and the industrial roads could be overcome by so arranging the level of transportation rates as well as the relationship existing between the price of different commodities, the weight of such commodities, and the space required for their transportation."

Report of the Joint Commission of Agricultural Inquiry, Part III, "Transportation," 1922, p. 3.

ing the railroad regionalization, which cannot much longer be delayed, as to combine into each of the larger systems the primarily agricultural and the primarily industrial roads. As regards the first difficulty — the opposition of the industrial shippers — it is worthy of study as to whether, in times of general agricultural depression, provision for temporary and limited changes in railroad rates might not be made by the Interstate Commerce Commission, in order to lighten the burden of the farmers. With the system that has been adopted in recent legislation, of giving what amounts to a virtual guarantee of reasonable profits to the railroads, it might then become necessary, in order to prevent corresponding increases in industrial rates, for the government itself to defray the burden of the deficit which would result from the lower schedule of agricultural rates. To this suggestion the answer might be made that it amounts to a subvention or a subsidy. There seems, however, to be no other escape from the dilemma. If the railroads under private control cannot earn enough to keep going without making rates which transcend the possibilities of the shipper, the government in the long run must come to the rescue in one of two ways. It must either take over the management of the railways and be prepared to run them at a loss, making up the deficit out of general taxation; or, if private regulation and management seem preferable,

it must be ready to step into the breach and, for the time at least, to make good the deficit. If freight rates are, in times of depression, too high for agriculture, and if the railroads themselves cannot afford to make the necessary reductions, it is at least worthy of discussion whether it is not the function of the government to step in and help.³

The other aspect of the transportation problem is water transportation. Here again there is no doubt that a considerable lessening of costs could be attained by the construction of artificial or partly artificial waterways, like the projected Lakes to the Ocean canal. As over against the advantages of this plan we must, however, set several countervailing considerations.

In the first place, the costs of a comprehensive canal development in this country will be immense, running into the thousands of millions of dollars. These gigantic sums will ultimately have to be paid out of taxation, and it is at least a moot question whether the resulting burdens would not outweigh the advantages. It would be far cheaper to accomplish the same result of lower transportation charges by utilizing the present agencies and enabling them to make the reduced charges.

³It is worthy of note in this respect that the Conservative Government in England has recently announced its determination to bring about a lowering of rates on agricultural products through a subvention to be made for that purpose to the railroads.

Secondly, a successful system of canal transportation will without much doubt interfere with the revenues of the railways. We should therefore be reverting to the same situation. For it will make little difference to the railways whether their loss in revenues is due to reduced rates or to decreased tonnage. In either case they will be plunged into difficulties, so that the government will again ultimately have to face the problem of either nationalizing or subsidizing them.

Thirdly, the construction of improvements like the Lakes to the Ocean canal at a cost of hundreds of millions of dollars will benefit only certain sections of the agricultural population, while the burden will rest upon the community as a whole. The same amount of money devoted to a general lowering of railway rates would benefit a far larger group and a far wider area.

It is true that sooner or later in the development of the country, when the railway system has reached its limit of possibilities, it may become desirable to spend huge sums upon improved water transportation. It is, however, open to question whether that time has yet come and whether the solution of our present agricultural difficulties is to be found in this direction. It is significant that the same problem of water transportation versus lower railway rates is being actually discussed in parts of Europe, and

especially in Germany, today; and the general trend of expert opinion is for the present distinctly against the further development of water transportation.

Our conclusion, therefore, is that the lot of the farmer can be ameliorated by reduced transportation rates, but that the most likely method of accomplishing the result is through a change in the rate structure, even though it involves some form of government aid to the existing railroads, rather than through embarking on the dubious policy of immense outlays on water transportation.

3. THE FUNCTION OF EQUALIZATION

We come now to the second of the four government functions, that of equalization. This may be discussed under the three heads of credit, taxation and the tariff.

a) CREDIT

So far as concerns credit facilities, much, as we know, has already been accomplished. But there still remains a field for government action in two respects.

In the first place, the ordinary credit facilities of the farmer are not yet equal to those of the industrial producer. The reasons for this are obvious. Agricultural credit is more uncertain and therefore on the whole less profitable. Not so much, therefore, can be awaited from private initiative. In fact, governments

have always been compelled to interfere to some extent in the provision of agricultural credit. What is needed in this country at present is an extension of the relatively short-time and intermediate credit arranged in such a way as to give the ordinary farmer approximately the same advantages which private initiative has accomplished for the industrialists and the city dweller. With the abundance of capital in this country, there ought to be some method of deflecting a reasonable share to the proper uses of the farmer; and if private initiative is not willing to accomplish this end, there is no reason why government should not intervene in order to facilitate the needed equalization of opportunity. What has already been accomplished by the Farm Loan and Intermediate Credit banks is in need of a further development.

Entirely apart, however, from the general credit problem and the necessity of improved agencies, we must revert to the particular situation in which the farmers today find themselves. Having been reduced, largely without any fault of their own, to their present condition and threatened, as thousands of them still are, with impending bankruptcy, the credit situation calls for a more drastic remedy. Money was borrowed during the inflation period on terms which under present conditions are crushing in their burden. What was natural and legitimate then has become extortionate and unendurable. If, through

some concerted plan which it would be easy in case of need to elaborate, provision could be made for a renewal of existing mortgages at a lower rate of interest, more could perhaps be accomplished than in any other way to ameliorate the present condition of the American farmer. Where whole classes of the community can still be saved from ruin by a more generous provision of credit facilities, it is difficult to resist the conclusion that the government is justified in stepping into the breach.

A distinction would indeed have to be drawn between the average farmers and those who cannot be saved or who ought not to be rescued. In the case of the submarginal farmer who is vainly striving to continue his operations on the low-grade land which was brought under cultivation in the War period, a renewal of the mortgage at a lower rate of interest would be useless and would involve a waste of effort. The slight reduction in his costs due to the rate of interest would not avail in the face of his far more important outlays. Even if the more generous credit were effective in saving him for a time, it would be highly inadvisable in this period of relative oversupply to perpetuate the submarginal and therefore low-grade farmer, whose contribution to the surplus affects the position of the farmers as a class. If credit facilities are to be granted, it should be done with discrimination and wisdom.

b) TAXATION

The second phase of the function of equalization deals with taxation. Although this is largely a state and local problem, the need of utilizing the agency of the national government must not be lightly dismissed.

The problem has two sides to it, that of expenditure and that of revenue. In proportion as our economy has become wider in character and as the national market has been replacing the local market, there has been a distinct trend toward the assumption by the national government of functions hitherto relegated to the states. It is the same development as that which has been going on within the states as between the state and the local government. The more restricted and confined the area, the more difficult is it for that particular agency of government to meet the new responsibilities that have been thrust upon it. Characteristic is the very recent movement in New York, where an essential feature of farm relief has been declared by Governor-elect Roosevelt's agricultural council to consist in the transfer to the state of not a few classes of expenditure hitherto reserved for the localities. For in New York the first step in the reform has already been taken. The general property tax has virtually disappeared for state purposes and has been replaced by the income tax, thus affording the farmer some relief.

What is taking place as between state and local expenditure is also commencing as between federal and state expenditures. In the matter of improved roads and in education this movement is only in its beginning. As time goes on, it will be realized that the development must be accelerated. In proportion as our economic life is becoming national, the fiscal ability of the nation is destined to grow more rapidly than that of the states; and with this transition there must come a further shifting of government functions. Just as the country schools were gradually being improved through the help of state funds, so the state highways are being rebuilt through federal assistance. Expenditures which are difficult to make from the local budget can more easily be met from state resources; tasks which transcend the abilities of state initiative are gradually being rendered possible through federal expenditure.

On the other hand, so far as concerns revenues, it is notorious that our prevalent system of state and local taxation is unfair to the farmer. The situation is especially burdensome to him at present where state and local taxation has been increasing rapidly in the face of a correspondingly rapid decline in his income. The state and local revenues still consist to a very large extent, and especially in the agricultural communities, of the general property tax; whereas in the more industrial states, like New York, the

general property tax has been replaced by the income tax. The business man has realized that his prosperity is to be measured in modern times by his profits, and not by his stock in trade. The farmer is only beginning to learn that, under a system where intangible personalty slips out of the assessment lists and especially in a period of low prices, with a comparatively slow adjustment of land values to lessening profits, he will fare better under an income tax than under a property tax. Where, as is so generally true, tax reform is delayed by the opposition of the middle classes and the force of tradition, it is even a question whether it would not be desirable for the federal government to use its influence in hastening the transition of state taxation from a property to an income basis. The federal government is already exerting pressure upon the states to retain and to modify the system of inheritance or death taxes. Is there any sound reason why a similar influence might not be exerted with respect to the income tax? Local finance has been considerably improved in recent years by the pressure, direct and indirect, brought to bear upon the localities by the states. Are we not fast nearing the time when a similar pressure exerted by the federal government may help to bring about more equitable methods of state taxation?

c) THE TARIFF

The third phase of the function of equalization has reference to the tariff. So far as the farmer is concerned, there are two aspects of the tariff question. The one deals with the lowering of the cost of goods which he buys; the other deals with the raising of the prices of products which he sells.

Lowering the cost through a reduction in the tariff would naturally constitute one method of improving the status of the farmer. We should in this way reduce the farmer's expenses of production and his cost of living without setting in motion the complicated machinery which would be necessary in order to bring about an increase in the prices of his products. A reduction of the tariff presupposes, however, that the farmer does not secure any benefits from the protective tariff. We need not go into this question, because of the obvious consideration that it would be believed to mean a lessening of the profits of the manufacturer and a reduction in the wages of the laborer. Whether or not these consequences would follow is immaterial, because of the evident political impracticability of the entire scheme. Whatever we may think of the advisability of a substantial reduction of the tariff, there is no doubt that it is as yet beyond the pale of practical politics. The United States is committed for good or for evil to the policy of protection; and it will in all probability

not be until our exports become overwhelmingly industrial in character and until the foreign market assumes a far greater importance than the domestic market, that we may expect to see any change of moment in the tariff.

Since, therefore, a reduction of the tariff on the products purchased by the farmer may be eliminated from practical consideration, the question arises as to whether the tariff cannot be increased for the purpose of securing higher prices for the products sold by the farmer.

So far as a direct benefit from agricultural protection is concerned, it must be remembered that many of our agricultural products are not in a position to be injured by foreign competition. In certain staple commodities like cotton and wheat, we are on an export basis, and in not a few other products the costs of transportation are so relatively large as in themselves to act as protective influences. There are, indeed, a few exceptions as in the case of wool, of sugar, of certain grades of wheat, and occasionally of other products in the areas contiguous to the Canadian frontier. In the main, however, a direct influence of the tariff on agricultural products in general would be difficult to establish at the present time. Export duties, even if they might be of any use, are forbidden by the Constitution; and import duties are of slight avail when nothing is imported.

In only one respect can we find in the tariff any possibility of substantial help. This is as an adjunct to the project of price control. The tariff might be used in the effort to preserve a home market for some products, and especially through the device of making a distinction between domestic and foreign prices. This indirect operation of the tariff is a matter to be considered later.

In all the projects hitherto discussed in this chapter, we have been dealing with government action which affects economic life in general and which only incidentally or indirectly influences agriculture. Problems of the general price level, of credit and currency, of transportation, of taxation, and of the tariff involve considerations that transcend the interests of the farmer. If rightly handled, however, they are susceptible of producing distinct advantages for agriculture as well.

We now come to a class of government functions which are primarily and specifically directed to the benefit of agriculture. These groups, it will be remembered, involve the functions respectively of education and of price modification.

4. THE FUNCTION OF EDUCATION

The educational functions of government, so far as concerns agriculture, comprise the collection of pertinent information, the development of research, the dissemination of statistics and the imparting of

proper advice. This work has already assumed considerable proportions and has gone further in this country than anywhere else in the world. While the state governments have contributed their share, the national government has taken the lead for many years. Through its various bureaus, the Department of Agriculture has accomplished admirable results both as an agency for investigation and the diffusion of knowledge, and as a clearing house of information and suggestion. The Department numbers among its assistants eminent scholars, well-trained statisticians and expert technicians. Many of its publications are of the highest degree of merit. Much more can still be achieved along the present lines of investigation and much more will no doubt be accomplished in the future.

5. THE FUNCTION OF PRICE MODIFICATION

The Department of Agriculture, however, is scarcely fitted to undertake the other and more important functions which have to do with modifying the more basic factors of agricultural prices. For this purpose there is needed a special governmental board composed not only of men of learning but of men of action. A commission or council of this kind might properly be called a Farm Board, and it is in connection with such a possible organization that it seems wise to discuss the remaining function of government, that of price modification.

CHAPTER VI
THE FUNCTIONS OF A FARM BOARD

THE FUNCTIONS OF A FARM BOARD

While the chief function of a farm board would be to devote itself to the questions connected with prices, its very existence would enable it to render valuable service to agricultural interests in general. Classifying the possible functions of a farm board into the two categories of minor and major functions, we shall first say a word about the former class.

1. THE MINOR FUNCTIONS

The first function of a farm board would be to act as a center of discussion for the legitimate demands of the farmer and especially to help him to secure the needed readjustment of credit facilities, of taxation and of the tariff. The farm board could present the case for the farmer more effectively than the private agencies could do and, being a branch of the government, would be able to bring proper pressure to bear upon the Administration as well as upon Congress. It might also suggest to the Department of Agriculture the desirability of new investigation and additional publication.

The second function of a farm board might be that of establishing model farms and farm communities. We already have a few such model farms as a result

of private initiative and corporate action. But the backwardness of agriculture compared with industry is so pronounced, the slowness with which the average farmer is induced to utilize the results of modern science and of business organization is such that an indication of the new roads to be traveled and the fresh methods to be employed might safely be entrusted to a special study division of a farm board. It is true that the model farm communities attempted by Dr. Mead in California were not very successful, but the experience in other countries has been more favorable and the principle itself is perhaps susceptible of a wider application.

The third function of a farm board would be to arrange for a better classification of land. The diversity of uses of our land area is so great and the difficulty of turning each particular section to the best advantage is so pronounced that much remains to be done in this respect. In the present situation there has been a rather unsatisfactory adjustment between forest, grazing and arable land, as well as a lack of coördination between the reclamation policy of the government and the actual needs of restricting rather than increasing acreage.¹ The relative

¹ Cf. in general C. O. Sauer, "The Problem of Land Classification," *Annals of the Association of American Geographers*, Vol. XI; Gray, L. C., "The Utilization of Our Lands for Crops, Pasture and Forests," *Agricultural Year Book*, 1923, p. 503; P. S. Lovejoy, "Theory and Practice in Land Classification," *The Journal of Land and Public Utility Economics*, Vol. I (1925), p. 160.

merits of forestry or pasture, and the desirability of irrigation or of drainage are only some of the other points calling for attention. A committee of the farm board which would coördinate the existing knowledge on these points, and which would push for appropriate action by Congress or the administrative authorities, would be of considerable assistance. Not the least of its achievements in this respect might be in connection with the policy of price control, to be discussed in a moment.

Of greater importance, however, would be the major functions of a farm board, connected with the attempt to exert influence on the more basic factors of agricultural prices through what we have called price modification. The modification or influence could be brought to bear indirectly or directly. Price could be affected indirectly by diminishing risk or by modifying the supply. Price could be influenced more directly by lessening fluctuations or by a more positive control. In other words, we should have to deal with four points: the elimination of risk, the decrease of submarginal production, price stabilization and price control.

2. THE ELIMINATION OF RISK

We have seen in an earlier chapter that one of the outstanding problems of the modern farmer is that of uncertainty. To the extent that the uncertainties

of agriculture depend upon the forces of nature, it is obvious that some improvement can be secured by applying to them the principles of the distribution of risk which are already so largely utilized in other domains of economic life and which fall under the head of insurance. The reason why insurance has played so small a part in the solution of the farmer's problem is a double one. The preliminary information upon which to base the annual premiums has been lacking, and a confusion has been made between the principles of calamity insurance and of price insurance.²

So far as concerns the first point, it will be remembered that ordinary life insurance and fire insurance are phenomena of comparatively recent and slow growth. Fire insurance is scarcely more than two and a half centuries old: life insurance is of still more recent development, having suffered for a long time from the inaccuracy of the mortality tables employed. Among the various disasters that threaten the farmer, only one risk—that of hail—has met with any significant attempt to avert its

² The more valuable, among the few studies of insurance, are: V. N. Valgren, *Crop Insurance: Risks, Losses and Principles of Protection*, Bulletin No. 1043, U. S. Department of Agriculture, 1922; N. A. Olsen, C. O. Brannen, G. P. Cadesch and R. W. Newton, "Farm Credit, Farm Insurance and Farm Taxation," in the *Year Book of Agriculture*, 1924; and especially *Hearings before a Select Committee on Investigation of Crop Insurance*, U. S. Senate, 67th Congress, 4th Session, 1923.

consequences.³ Were the government to assume the duty of collecting detailed statistics of hail losses over a term of years and of arranging to keep the proper records which would eliminate in any particular case the so-called moral hazards of the situation, a basis could soon be laid for the proper utilization of improved methods of insurance. What applies to hail could without much difficulty be extended to the other risks of climate or disease.

The second reason, however, why so little progress has been made in agricultural insurance is the failure to observe the needed distinction between calamity insurance and price insurance. In the few experiments that have been conducted by some of the old-line insurance companies, the neglect to bear in mind this differentiation is largely responsible for the failure of the experiment. If we regard business life in general, we shall find that this distinction is always observed. Individuals and groups seek to protect themselves by taking out fire insurance, or marine insurance, or theft insurance or accident insurance. But it has never occurred to any business man that it would be desirable or possible for him to take out general loss insurance. To attempt to protect individuals against such changes in prices as might involve them in loss would require a pre-

³ Cf. Manes and Rohrbeck, "Hail Insurance: Its Economic Aspects," *International Review of Agricultural Economics*, Rome, Vol. III (1925).

mium so high and would involve a moral hazard so great as to be utterly impracticable. Ordinary business life protects itself through calamity insurance; it has never endeavored to protect itself through price insurance.

Identically the same situation confronts the farmer. In so far as fluctuations of price are due to variations of output, he can and ought to shield himself by the application of calamity insurance. In so far as fluctuations in price are due to other causes than variations in output, he must rely upon different agencies.⁴

If, then, calamity insurance — that is, insurance against the uncertainties of climate, or weather, or disease or earthquake — is desirable and under proper conditions practicable, what can government do to help? There are, indeed, not a few examples, both in this country and in other parts of the world, of the direct insurance of individuals. There is, however, no need for the government to go so far. If government will assume the responsibility of laying the foundations for practicable calamity insurance, the chances are that the business will gradually be undertaken either by private organizations like the

⁴ The failure to observe this distinction impairs the otherwise interesting conclusions of C. W. Hoffman, "Crop Insurance: Its Present Accomplishment and Its Possibilities," in *The Agricultural Situation in the United States*, "Annals of the American Academy of Political and Social Science," Vol. CXVII, 1925.

old-line or mutual insurance companies, or by the coöperatives, some of which are already in a modest way adding this function to their other duties. The national government can, however, contribute in no small measure to this development by undertaking the task of reinsurance for the ordinary organizations, especially where the latter are limited to such a restricted sphere of operation that they are incapable of assuming responsibility for unusual losses which may extend over the entire territory. It is the national government alone which can accomplish this result by providing for a nation-wide reinsurance plan under which losses from local disasters might be spread over the entire insurance area. Were the farm board to undertake such a function, it would contribute greatly to an improvement in the whole situation, which would tend to bring agriculture into line with industry.

3. THE DECREASE OF SUBMARGINAL PRODUCTION

We have learned in an earlier chapter that one of the chief difficulties of the farmer arises from the difference between agriculture and industry so far as concerns the marginal producer. In industry, with its rapid readjustment to new conditions, the submarginal producer is continually disappearing as losses culminate in bankruptcies and lead to a transfer of labor and capital. In agriculture, the continued

existence of the poor land, on which it is almost impossible to make a living and which does not become a deserted farm until all hope has been abandoned, is in part responsible for the distress not only of the particular farmer who cultivates the poor land but of the others as well. The particular cultivator cannot make both ends meet, because of the poverty of the soil; but the continued production on land that should not be devoted to such crops contributes to the increase of the surplus which is in part responsible for the low prices.

This submarginal land is to be found either in the hilly sections or on the level stretches of plain or valley which are deficient in water or in the other ingredients of fertility, where the costs of rejuvenation are relatively excessive. As we learn from the census, there were in 1924 over twenty-five million acres of arable land and over one hundred million acres of ploughable pasture lying idle. It is more than probable that any expansion of the crop area that may be needed during the next few decades will come from these two classes of land already in the farms. Of the forty-five million acres added to the crop area between 1909 and 1919, over forty came from pasture, and less than five from clearing of forest or cut-over land. In view of the greater labor cost required at present for the clearing of land, it seems probable that any expansion in the crop

acreage that may come in the near future will occur in the level plains of the West rather than in the forested areas of the East and of the Pacific Northwest. This has been the trend during the past twenty years, and the tendency is likely to be accelerated by the increasing mechanization, and specially the utilization of the combine, to which we have previously called attention. Most of the forest land that remains uncleared in the East is either very hilly or consists of very poor soil, and the prospect of needing either of these types of land for the production of crops is becoming more remote with every improvement in agricultural technique.

The question therefore arises whether this would not be a fitting time to ease the agricultural situation by the extensive purchase of such submarginal lands as are suitable for forestation. They are now available for purchase at comparatively low figures, and the funds obtained by the owners would enable them to buy farms in the better regions. So far as these particular lands are concerned, moreover, it would appeal to everyone interested in the policy of conservation. For it would tend to preserve the soils of many hillsides that are now washing down into the rivers and which frequently cover the more fertile valley lands with worthless and destructive gravel. Unless these submarginal farms suitable for reforestation are purchased, they are likely to be sold and

resold to a succession of innocent persons, each one of whom will lose the best part of his life in a project doomed to failure. Moreover, the resulting temporary decrease in the total output would help to raise the price of agricultural products in general.

What has been said of the hilly lands in the East is applicable also to the fringe of submarginal lands in the South and the West. Just because these lands are worth little, they could be bought at a relatively small outlay. Part of the funds for such purchase is already available from the existing forest-acquisition laws, and the temper of the American people at the present time is such as to render possible the project of further appropriations out of general funds to facilitate the purchase of such lands on a large scale. While this could be done by both the states and the federal government, the general plan and the control of the administration would have to be relegated to a central body. The farm board, following out the policy of careful classification, might, by entering upon these methods of land purchase on a large scale, help considerably not only to promote the conservation of our natural resources but materially to improve the condition of the present-day farmer.⁵

We come finally to the most important task of

⁵ Cf. for somewhat analogous suggestions G. S. Wehrwein, "A Land Policy as a Part of an Agricultural Program," *Journal of Farm Economics*, July, 1925; and N. A. Olsen, "American Agriculture Needs a New Land Policy," *ibid.*, Vol. IX (1927), p. 401.

the farm board, which concerns itself more directly with the endeavor to exert a more direct influence upon the immediate price factors. There are two aspects of the problem: the one concerned with price stabilization, the other with price control.

By the stabilization of price we mean the ironing out, as far as possible, of the intra-seasonal and seasonal fluctuations, the extent and consequence of which, as we know, have greatly increased in recent years. In contrast to the attempt to iron out the price fluctuations is the endeavor to secure better prices in general. The object here is not so much to stabilize prices as it is to raise the level of prices.

In a certain sense these two aims of price stabilization and price control or elevation are interrelated. To the extent that the burden of the intra-seasonal fluctuations often falls upon the producer, stabilization will tend in the direction of a moderate raising of price. In the same way, a depression of price level in any one year depends in part at least upon the holdover of the surplus from a preceding year. To this extent there is here involved also an attempt to reduce the fluctuations, even though we now have to deal with the seasonal fluctuation—that is, the fluctuation from year to year—rather than the intra-seasonal fluctuations, or fluctuations within any one year. Moreover, any endeavor to deal with these price factors must work out through some treatment

of the market conditions, so that both stabilization and elevation have to do in a certain sense with marketing.

Despite these obvious interrelations, it seems wise to separate the consideration of the functions of stabilization and control or elevation. For the aim of stabilization is a leveling of extremes, with incidental rise of price, while that of elevation is rise of price with incidental leveling of extremes through the handling of a surplus. Inasmuch as the process of stabilization can be most clearly observed in the intra-seasonal fluctuations, we shall begin with this aspect, leaving the season-to-season fluctuations for subsequent consideration.

4. PRICE STABILIZATION

If we take up first the problem of price stabilization as applied to intra-seasonal fluctuations, it is clear that there is here involved the problem of what is generally called better marketing in the narrower sense of the term.

We have learned that something has already been accomplished in the direction of more orderly and economical marketing by the various coöperative organizations. Only a fraction of the field, however, has been covered, especially in cases where the non-staple farm products are sold in the wider national market. The coöperatives, whether dealing in perish-

able or non-perishable products, have hitherto found an outlet for their activities primarily in the attempt to accomplish the following purposes:

1. Obtaining advantageous freight rates.
2. Advertising programs to place the product more readily before the consumer.
3. Finding the most profitable market for the particular product.
4. Securing more even distribution and sales throughout the producing center of the year.
5. Eliminating the profits of the middleman so far as they are unnecessary or unduly wasteful.
6. Promoting a method of classification and grading which will tend to reduce defective products or crops raised on poor and submarginal lands.

The defects of the current marketing arrangements, which have been so seriously accentuated in recent years, are coming more and more to be appreciated in the case of both perishables and non-perishables. In perishables, an interesting illustration is afforded by a recent episode in the case of potatoes. The situation in the autumn of 1928 appeared to be an especially threatening one. It was estimated that there would be a crop of about 467,000,000 bushels of potatoes in the United States, which is approximately 100,000,000 in excess of the average annual requirements for domestic consumption. The prospect of such a sudden dumping of the

entire supply upon the market at one time seemed to be so great that a conference of representatives from nine important western states was called to consider the situation. The conference included not only potato growers and dealers, but bankers, railroad men, heads of land companies, merchants and representatives of chambers of commerce. Among the topics discussed was the possible formation of a national potato institute, to deal with the problem in a larger way. All manner of plans were suggested which are to be further discussed in a subsequent meeting at the end of the year. One of the prominent projects included legislation to regulate the grade of potatoes that can be shipped in interstate trade. If, as suggested, four grades of potatoes were created, in years of heavy production only high grades could be shipped, in years of great shortage all grades could be shipped, and in between all but the lowest grades might be shipped.⁶

The interesting feature of this project is that the effective control of any such plan would have to be delegated to the national farm board. For one of the principal considerations in the whole situation is the fact that stabilization as between production and consumption must be made after the crop is produced.

Similar projects have sprung up in the last few

⁶ This particular project is known as the Zuckerman Plan.

years in connection with other perishable commodities, such as fruits and vegetables. But the efforts to secure a more orderly marketing have hitherto been sporadic and lacking in complete success.

In the case of non-perishable products the need of stabilization is almost equally great. If we take wheat as an example, the shortcomings of the present situation have been clearly pointed out in a recent work.⁷ Emphasizing the tendency that has been recounted in a former chapter, we are told that "in the old days when prices fluctuated in the Chicago market, at most they affected only twenty percent of the income of the farmer. A violent drop in price could reduce the family income by only four or five percent. Today the same fluctuation in price, affecting as it does eighty percent to one hundred percent of the products of the farm, can take twenty-five to fifty percent away from the net family income and make the difference between comfort and freedom from anxiety and on the other hand debts and discouragement."

Changes have supervened of recent years which make the marketing of the wheat crop more mo-

⁷ *Marketing: A Farmer's Problem*, by B. F. Goldstein, N. Y., 1928. A more conservative view of the possibilities is contained in A. E. Taylor, "A National Wheat Growers' Cooperative: Its Problems, Opportunities and Limitations" in *Food Research Institute, Wheat Studies*, Vol. II, 1926, pp. 101-62. This was written, however, before the recent success of the Canadian pool.

mentous at present. Under former conditions the marketing of grain in terminal markets involved merely the storage, sale and delivery of the farmers' or the middlemen's grain; at present, so far as the export trade is concerned, it involves the merchandising by dealers of their own grain, stored, sold and delivered. Nevertheless, the regulations governing the marketing of grain in Chicago are predicated upon the original conditions no longer prevailing. Again, the regulations in the terminal market involve many double handling charges and duplications of services. Furthermore, since the World War the warehousing of grain, which has become an integral part of the machinery of food trading, has never been subject to federal regulation. Finally, there has been evolved a system of complicated grading which bears heavily upon the producer without always benefiting the consumer.⁸ While some efforts have been made in the direction of coöperative marketing, serious complications have resulted in the last few years from the corrupt and ignorant practices which led to the grain-marketing company scandal and the rye-screening scandal. While similar practices have not developed in the wheat pools, many of which are state-wide in their operation, the extent of their activities has been very restricted.

It is clear that the accomplishment of a unified

⁸ Goldstein, *op. cit.*, pp. 278-81.

program which is capable of dealing with these difficulties in both perishables and non-perishables requires a centralized organization. While the farm board could not be reasonably expected itself to accomplish this vast work, there seems to be no reason why it should not be of signal assistance in supervising the work delegated to coöperatives or to similar organizations. There is, to be sure, some risk of attempting too much by working from the top down rather than from the bottom up. A wise farm board, however, will endeavor to be mindful of both sides of the problem. It will seek to create and to nurture the growth of the local coöperatives, upon which alone the great central agencies can ultimately be built. But it will at the same time endeavor to aid financially and otherwise the activity of the great central agencies. For these central coöperatives will doubtless be fought tooth and nail by all the interests which they seek to displace and will be in urgent need of effective support.

One of the chief functions of a proper farm board will therefore be to create, to aid and to supervise the activity of coöperative and other organizations in their endeavor to better marketing facilities and to stabilize prices by reducing intra-seasonal fluctuations. What has already been accomplished in the case of wheat in Canada is an earnest of what may possibly be achieved both here and in other

products in the United States. If, therefore, there were no other reason for the creation of a farm board, a justification can be found in the performance of this most significant major function.

While stabilization is in itself so important and full of promise, and while the reduction of the intra-seasonal fluctuations will tend to improve farm prices, there still remains a possible and much controverted function for the farm board to undertake, namely, that of price elevation.

5. PRICE CONTROL

The attempt to secure a rise of price involves the whole field of price control. What do we mean by price control, and what are its possibilities and its limitations?

As a preliminary consideration it is well to make a distinction between the fixing or determination of prices, the control of prices and the modification or influencing of prices. Almost any economic action, whether it be exerted through government or not, which brings influence to bear upon conditions of cost, of demand or of supply, affects or modifies prices. Even the slightest change in conditions has some influence, however evanescent, upon the market. More particularly we have included, it will be remembered, under the head of the modification of prices not only the indirect influences exerted

upon the degree of risk and the area of the output, but also the more direct influence brought to bear upon the range of price fluctuations.

At the other extreme from the indirect influencing or modification of prices lies the attempt to fix prices, that is, the endeavor on the part of government to determine what the exact price for a commodity in the market shall be. The fixing or determination of prices demands for its success such a power over the operation of economic forces as virtually to neutralize them. It is apt to succeed only in the most unusual circumstances, as during a great war, or in the case of monopolies like the so-called public utilities, which are already, as it is said, affected with a public interest.

In between the modification of prices, which is almost constant, and the fixing of prices, which is ordinarily almost impossible, lies the control of prices. The control of prices does not attempt as much as the fixing of prices. It satisfies itself with the endeavor to supplement the forces which emanate from the ordinary actions of human beings. Lying midway between price fixing and price influencing, its task is neither insignificant nor superhuman. Whether the attempt is vain depends upon the degree of control which is sought and upon the conditions under which it is applied.

a) THE CONDITIONS OF PRICE CONTROL

The conditions of successful price control in any commodity are threefold. In the first place, the control must operate over a substantial part of the supply. Where, as in the case of state monopolies, the government controls the entire supply, the problem, so far as this point is concerned, is comparatively simple. In ordinary business, however, effective control does not necessarily mean control of the entire supply. The control can still be fairly effective if it operates on somewhat less than the whole supply. There have been numerous cases where even a considerably smaller part, provided that it amounted to more than a half, was adequate for the purpose. Nevertheless, it is obvious that the larger the percentage of the supply controlled, the greater will be the possibility of success.

The second condition is that the attempt to control price will not lead to a substantial falling off in the demand. This again depends on the responsiveness of demand to price changes and upon the degree to which substitutes are available. Where the attempt to raise prices leads to a substantial falling off in the demand, the forces tending to a rise of price will be counteracted by those operating in the opposite direction, with the result that the effort will be relatively futile.

The third condition is that there will be no great

increase of supply. If the control leads to such a rise in price as to induce the producer to increase his output, or if it operates as an incentive to the outsider to transfer his labor and capital from the less profitable to what are now more profitable opportunities, the ultimate consequence will be a tendency to decreased price. The effects of price control would in such a case be short-lived and the final result may even be a situation less satisfactory than the one before the control was applied.

The tendency for the output to respond to the increase of price depends, however, largely upon the extent of the area to which the price control is applied. If a single commodity is selected for the experiment, it is clear that a great rise of price will quickly lead to a growth of the supply. If, however, the area of control is widened so as to include more and more of the products which are amenable to the influence of shifting, the results may be different. If a single commodity becomes unduly profitable, the tendency to transfer the labor and capital to that commodity is irresistible. If similar opportunities are provided for the other commodities in the group, the tendency is correspondingly checked. Not until the entire level of all agricultural commodities, again, is raised beyond that of industrial products, will there be set in motion a transfer of labor and capital from industry in general to agriculture.

In the situation that confronts the country at present, there is little immediate prospect of any such general and universal shifting. Agriculture as a whole is in a state of relative depression. The aim of the control of prices is to lessen the depression and to decrease the disparity between agriculture and the other forms of economic enterprise. Not until the general level of agriculture is raised so high as to make agriculture as a whole more attractive than industry would the more serious forces of readjustment be set in motion. But the possibility must not be disregarded.

The final consideration affecting price control is the effect exerted on the consumer. The consumer may be in part himself the producer or he may be distinct from the producer. To the extent that the consumer is himself the producer, as is still partly the case in agriculture, the result of price control will be attenuated. What helps him as producer injures him as consumer. To the extent that the consumer is not the producer, the diversity of interests becomes a class rather than an individual matter. The repercussion of the control upon the consumer is one carefully to be considered.

While price control is not the same as price fixing, there have been examples of the former which have closely approached the latter. In the ordinary monopolies which are known as public utilities, like the

railroads, the gas companies and the like, government control endeavors to fix maximum prices in order to protect the consumer. In the United States this effort is limited by the constitutional inhibition which prevents the confiscation of private property. The problem presented to government in this respect is the same as that which faced the medieval state with industry in general, namely, the fixing of a fair price — a price that is fair to the producer as well as to the consumer. On the other hand, we have had frequent examples of the attempt to fix prices primarily in the interest of the producer. The aim here is not to set a maximum price in order to protect the consumer but to fix a minimum price in order to encourage the producer. The chief illustrations of this are found in the World War, where minimum prices were determined for various agricultural products in order to increase the supply. In the time of peace also, governments occasionally set minimum prices, as when they desire to monopolize the output of a particular commodity for fiscal reasons. The prices are fixed so as not to fall below a certain level in order to afford the maximum revenue.

Apart from these examples, governments have not infrequently attempted to control prices in the interests of the producers. Here we find both conspicuous failure and conspicuous success. A leading recent

example of the failure of the attempt to control prices is seen in the experiments of Great Britain with rubber. Under the Stevenson law of 1922, the history of which is fairly familiar, the price of rubber, which had been unprofitably low, was driven up to an unheard-of degree so as to afford great profits to the colonial growers. The very extreme in the elevation of prices, however, led to an increase of output in many other parts of the world, with the final result of a depression in the price of rubber far below that which existed before the control began. In addition there was such an increased competition that the British rubber plantations now produce a far smaller proportion of the world output than was formerly the case. After a period of inordinate profits they have suffered both a positive and a relative decline, and the law was repealed in 1928.

A similar failure accompanied the attempt of the Burley Tobacco Pool, in the United States, to control price. Here also the price was driven up to an inordinate extent, with the consequence that the outsiders were induced greatly to expand their production and to act independently of the pool, so that in the end the whole scheme collapsed.

On the other hand, we have had examples of a control of price which was more modest in character and more effective in results. A leading example of

this is the valorization of coffee by Brazil. The situation here, indeed, is peculiar in that coffee is the chief export commodity of the country and enjoys a position, if not of monopoly, at least of great superiority over all other sources of supply. In the earlier days when the Brazilian government went so far as to attempt the fixing of definite prices, the results, due in part also to the inability of the central agency to carry out any general plan of action, were not always successful. But in more recent years when the government has contented itself with the endeavor to exert some effective control on the output and export and to prevent in this way a disastrous fall in prices, the result to the coffee growers has been more satisfactory.*

* This is evident from the following table. The prices are for Rio number 7, bought in New York, giving the nearest fluctuation to a cent.

DATE	PRICE
July 1, 1919-----	22c
Jan. 1, 1920-----	15c
July 1, 1920-----	13c
Jan. 1, 1921-----	6c
July 1, 1921-----	6c
Jan. 1, 1922-----	9c
July 1, 1922-----	11c
July 1, 1924-----	15c

The original law was passed in 1924, since which time the prices have been as follows:

DATE	PRICE
Jan. 1, 1925-----	24c
July 1, 1925-----	21c
Jan. 1, 1926-----	18c

The São Paulo Coffee Institute, as it has been called since 1926, is administered by the Secretary of the Treasury with an advisory council. The control of coffee prices is based largely upon the regulation of exports, the imposition of a transport tax and the management of both purchase and sale. This is facilitated by providing a series of warehouses for storing the coffee, and supplying a fund for financing the operations, and by extending loans to the planters to tide them over the extra period of delay while their coffee is being held off the market.

Other examples of price control might be mentioned. Entirely apart from the examples of government monopoly, we find government control of cotton in Egypt and to a certain extent in Australia, the valorization of currants in Greece, the control of hops in Great Britain, of oleaginous plants in Austria, of ostrich feathers in South Africa, of sisal in Yucatan and of wool in Australia. In Australia and New Zealand there exist also examples of government control of meat and dairy products.

In the great majority of cases where government control of prices has been fairly successful, it will

July 1, 1926-----	15c
Jan. 1, 1927-----	20c
Jan. 1, 1928-----	14c
July 1, 1928-----	15½c
Dec. 1, 1928-----	17½c

While prices have of course fluctuated, the fall has been greatly decreased and the general level of prices has been substantially raised.

be found that the success has been in a definite relation to the moderation with which it is exercised. Where too much has been attempted, the results have generally been unsatisfactory; where a more modest program was set up, the results have not infrequently been beneficial. The effectiveness of price control varies from country to country, from commodity to commodity and from method to method.

We are now prepared to consider the possibility of price control in the United States.

The problems of price control relate primarily to the non-perishable and staple crops, for in the case of perishable products the situation can be much more readily handled through the attempt at stabilization. In the staple crops the major concern of price control would relate to the problem of the surplus. Partly because of the great diversity of our staple crops, the task of control is not a simple one. The differences between the various crops hinge largely upon the following points:

1. To what extent is the product capable of storage or conservation without undue loss?
2. Is the market a home or a world market?
3. If a domestic market, does the home crop equal the consumption or do we import from abroad?
4. If a foreign market, what proportion of the supply is under the control of producers in this country?

5. What are the extent and the nature of actual and of potential production?
6. What is the probability that substitutes will take the place of the product in question?
7. Is the demand elastic or inelastic?
8. What is the prospect of serious opposition emanating from consumers, vested interests or foreign governments?
9. What is the prospect of increased output?

Let us take up the chief staple crops in their order and deal first with wheat.

b) PRICE CONTROL OF WHEAT

A number of characteristics seem to adapt wheat to price control: it is a standardized product, it is capable of being stored, it is produced very largely for the home market, it is essential to national welfare, it is subject to the most serious hazards in that low world prices may coincide with an inordinate domestic output.

A possible function of the farm board so far as concerns price control might be to reduce the seasonal fluctuations by dealing with the surplus. If prices threatened to fall because of a great surplus either here or abroad, it might attempt to utilize the market machinery, referred to above, which would already be in existence as the result of the effort to iron out intra-seasonal fluctuations. Making use of the revolving fund, which presumably would

be at its disposal, the board might induce coöperative or other central organizations to make large purchases to be stored and held over to a subsequent year when the price situation might be more favorable, and then sell in either the domestic or the foreign market.¹⁰ The mere existence of the surplus at the end of the year would be a warning to the farmers to limit their output for the ensuing year, and thus to refrain from adding to the causes which would prevent a rise of price.

This seasonal activity of the farm board would be in the nature of an addition to its normal efforts, and might well be reserved for periods of exceptional emergency. The board would be fully occupied for a time at least in performing its more modest but urgent functions of ironing out the intra-seasonal fluctuations. The difficulties of the attempt, moreover, would not be so entirely different from the plan now to be discussed.

We come, in other words, to the project which has occupied the center of the political stage for several years — the endeavor, namely, to deal with the ex-

¹⁰ Some such plan as this is favored by W. M. Jardine (the Secretary of Agriculture): *National Aid and the Stabilization of Prices*, 1927, and *Stabilizing Farm Prices*, 1927. It is also at the basis of the new McNary bill introduced into the Senate in December, 1928, which provides for a farm board, with advisory councils representing the producers, and with so-called stabilization corporations designed as central merchandising agencies, to secure bargaining power for the producers, and to provide means, through a revolving fund of \$300,000,000, of handling the surplus.

portable surplus and to utilize the agency of the tariff.

The plan may be described as follows:

When the farm board or its representative bought wheat, it might pay the farmer only a part of the stipulated price, reserving the balance to be settled at the close of the year. This balance would be augmented by the increase per bushel to which the price might be driven in removing the surplus from the market; but on the other hand it would be reduced by the farmer's proportion of the possible losses suffered by the farm board in disposing of the surplus abroad. Inasmuch as the exports of wheat form only about 20 or 25 percent of the total crop, the farmer would obviously gain more than he loses.

The three essential points in this program are the removal of the surplus for disposition abroad, the prevention of imports through the agency of the tariff and the imposal of the cost, including possible losses, upon the farmers benefited. An alternative proposition, which in the present temper of the American people is rather unlikely and which is moreover rejected by the great mass of the wheat farmers themselves, is to have the costs of the operations met by a government subsidy or bounty.¹¹ Owing

¹¹ This plan, originally suggested by David Lubin in 1892 in the form of export bounties, has been propounded by Professor C. L. Stewart of the University of Illinois in the shape of export debentures and has been supported by the National Grange.

to the fact that the proposition has been supported by so small a fraction of the proposed beneficiaries, it may be dismissed from consideration.

The above program, which has been embodied in the successive McNary-Haugen bills, may be envisaged from three angles: its soundness in principle, its difficulties in practice and the obstacles arising from conflicting interests.

Taking up first the principle itself, it must be remembered that we are dealing here not with the fixing of prices but with the influencing of prices, as is done by every market agency at the present time, or by the ordinary operation of the tariff.¹² The farm

¹² As Sir Josiah Stamp has well said, "The scheme is not a price-fixing one, for it merely creates an addition to a moving world price." In G. N. Peek and C. C. Davis (Discussion with Josiah Stamp), *The Agricultural Problem of the Export Surplus*, 1927. This quotation, found in the supplementary letter of May 13, 1926, is not found in the edition of 1926. In the same way the opinion of the Attorney-General on the 1928 bill states, "The theory of this measure is not that the board shall fix artificial prices . . . but that it shall assist coöperatives to influence the prevailing price indirectly."

The literature of the McNary-Haugen bills is immense. Among the more important contributions on both sides are the following:

IN FAVOR

H. C. Wallace, *The Wheat Situation: A Report to the President*, 1923; and *Our Debt and Duty to the Farmer*, 1925.

The McNary-Haugen Bill: Report of Mr. Haugen, 69th Cong., 1st Sess., House Report No. 631, May 2, 1924.

G. N. Peek and C. C. Davis (Discussion with Sir J. Stamp), *The Agricultural Problem of the Export Surplus*, 1926.

F. O. Lowden, "The Farm Problem," *Journal of Farm Economics*, Vol. IX (1927), p. 11.

G. N. Peek, *Equality for Agriculture, The Nation's Concern*, 1927.

board might, indeed, at the beginning of the year announce a price which it expected to be able to pay the producer; but if it decided not to pay the whole price at once, it might as an alternative plan pay over at the time only a portion of this announced price, leaving the balance to be adjusted as a result of the operations. What that balance would be, no one can tell in advance. Prices would in such a case not be fixed; they would be influenced.

The problem of economic theory resolves itself into two questions: can the domestic price be driven

F. W. Murphy, "Why the Equalization Fee," Reprinted from *The Farm Journal*, 1927.

The Agricultural Surplus Control Bill: Report of Mr. Haugen, 70th Cong., 1st Sess., House Report No. 1141, April 5, 1928.

G. N. Peek, *The McNary-Haugen Bill Second Veto Message: An Analysis and Reply*, written by Agricultural Service, May 29, 1928.

H. A. Wallace, *Why the Nation Needs the Farm Bill*, 1928.

OPPOSED

E. Englund, "Fallacies of a Plan to Fix Prices of Farm Products by Governmental Control of the Exportable Surplus," Reprint from the *Journal of Farm Economics*, 1923.

E. Meyer, Jr. and F. W. Mondell, *Report to the President on the Wheat Situation*, 1923.

A. E. Taylor and J. S. Davis, *The McNary-Haugen Plan as Applied to Wheat: Operating Problems and Economic Consequences and Limitations Imposed by the Present Tariff*, "Food Research Institute, Wheat Studies," Vol. III, 1927, pp. 177-234 and 235-64.

Veto Message: Surplus Control Act, 69th Cong., 2d Sess., Senate Doc. No. 214, February 24, 1927.

Veto Message relating to the Agricultural Control Act, 70th Cong., 1st Sess., Senate Doc. No. 141, May 3, 1928.

J. E. Boyle, *Farm Relief*, 1928.

J. D. Black, "The McNary-Haugen Movement," *The American Economic Review*, Vol XVIII (1928), p. 405.

above the foreign price and, if so, will the attempt be frustrated by alterations in either demand or supply?

The present tariff on wheat is 42 cents and the average cost of bringing in the Canadian wheat is about 8 cents. Can the farm board increase the market price of all the different grades of American wheat by 50 cents?

This seems to be doubtful. Owing to the better quality of the Canadian wheat, it enjoys a higher price in the market and is even today imported by American millers over the tariff barrier. If the domestic price of standard grades of wheat were raised by 50 cents a bushel, the quantity of Canadian wheat imported would undoubtedly increase and this increased supply would tend to restrict the rise of price. The only way in which this could be prevented would be still further to increase the tariff on wheat or to lay an embargo on its importation. Without going into the details here, it may be said that in all probability the rise of price under the existing tariff would be measurably less than 50 cents a bushel.¹⁸ Even this, however, would be decidedly worth while.

How far, in the next place, would this rise in price be frustrated by alterations in demand or supply? The influences emanating from the side of demand may be considered of little moment. The cost of

¹⁸ Cf. the studies by A. E. Taylor and J. S. Davis mentioned in the last note. Their conclusions are perhaps a little too conservative.

wheat constitutes only a small part of the price of bread. Furthermore, wheat is a raw material and the price in question is a wholesale price; retail prices, as we know, fluctuate less than wholesale prices, and processed or finished goods less than raw materials. Thirdly, bread constitutes relatively so small a proportion of the outlay for food in this country that even a moderate rise in the price of bread will in all probability lead neither to the use of substitutes nor to a decided restriction of consumption. Serious changes in the demand for wheat are therefore not to be anticipated.

More important is the question of supply. Would a rise in the price of wheat lead in the following year to such an increase in acreage and output as to create an unmanageable surplus and thus reintroduce the difficulties to be overcome?

As to this we must remember the failure of the rubber experiment permanently to increase prices, but on the other hand we must note the comparative success of coffee valorization. Both the failure and the success are due to particular conditions. Wheat apparently occupies a middle position between rubber and coffee. There is, indeed, no virtual monopoly of the supply, as in coffee; on the other hand there is no prospect of a very great increase of foreign output, as in rubber. In the older countries there is

no fresh land to utilize for this purpose; and in the newer countries, like Canada, every effort is already being made to increase acreage.

What, however, would take place at home? Here it must be remembered that owing to the development of the last few years there is comparatively little fresh wheat land available. Irrigated tracts would find it more profitable to raise other products. The chief prospect of increasing the supply of wheat can be seen either in a more intensive cultivation which would increase productivity, or in a shift from other crops to wheat so as to increase acreage.

The first contingency is indeed possible, and is in fact being partly realized at present. But a very marked increase of output would depend primarily on a general influx of capital from industry to agriculture, and this prospect seems to be relatively remote. As long as agriculture remains in its present depressed situation, there is little inducement for the general transfer of capital from industry to farming. The whole object of the plan of farm relief is to diminish the losses of the farmers, not to give them exaggerated profits. At the same time it must be remembered that those farmers who even now earn profits because of their better land or lower costs would find it advantageous to add to their output if prices were to improve.

The increase of supply, however, would be much more apt to result from a shift from other crops to wheat.

As to this, two points are to be made. If price control were applied only to wheat, it is true that there would be a noticeable shift in different parts of the country from cotton to wheat or from corn to wheat. If, on the contrary, the same machinery of price control were applied to cotton and to corn as to wheat, this factor would tend to disappear. As we shall see, however, it is far more difficult to apply price control to cotton and corn than to wheat.

The other point is the proposal to spread the losses over the crop benefited. The individual farmer who was contemplating a shift, let us say from cotton to wheat, because of this year's increase in the price of wheat, would know that in the following year, if prices fell with a greater output, the charge imposed upon him as a deduction from his gains would be greater. He would think twice before diminishing his contemplated profit. In the course of time he might learn to be guided by the advice of the farm board as to which crops it would be better for him to plant.

Here, however, we note a significant change in the successive McNary-Haugen bills. In the original plan the so-called equalization fee was to be assessed primarily on the individual farmer, as is contemplated

above. In the final bill, which was vetoed in 1928, the question of how the equalization fee was to be imposed was relegated to the judgment of the farm board; and, largely for the purpose of simplified administration, there was added the possibility of assessing the fee not upon the original producer but upon the dealer or the railroad company, or in some other way.

It will be observed that what is gained in the way of simplification is lost in this more important point of influencing future output. If the farmer receives at the very outset the whole amount of the stipulated price, and if the equalization fee is turned over to the general fund to be reduced by any possible losses, it is clear that the responsibility for the failure to decrease output is no longer placed with such emphasis upon the individual producer. It is true, indeed, that if the losses in any one year are great, it is probable that the farm board will reduce the stipulated price payable to the farmer in the following season. But the reduction in price will now apply to the entire crop and there will be less feeling of individual responsibility on the part of each farmer. So far as the influence upon the restriction of output is concerned, the earlier plan seems therefore decidedly preferable to the later one, and both of them are better than the more recent suggestion of abandoning the equalization fee entirely and having all

the expenditures and losses defrayed by the government; for in this way the proposition is little if at all superior to the plan of government subsidy or export debentures.

It is conceivable that if neither of these methods is effective a more direct expedient might be employed. Congress might be willing to arrange for an excise tax on a sliding scale to be proportioned in some way to the increase of acreage in any one year. The use of such a method, however, while possible in principle, would be of doubtful expediency except in a great emergency.

As a theoretical proposition, therefore, the plan would seem to be somewhat problematical. It would indeed be feasible to drive the domestic price above the world price, to a certain extent at least; and it is possible that the result would be fairly permanent, but only provided that the plan is developed in such a way as not to exert any effect on the increase of production. If the individual farmer could be made responsible for the losses due to an increased supply, this result might in a measure be achieved. Upon the force of this pressure, however, would largely depend the possibility of success. The difficulties in the way are profound. They would scarcely be overcome by the methods propounded in the last McNary-Haugen bill.

If the project, then, is to this extent problematical

in theory, is it workable in practice? Here it goes without saying that we must presuppose an expert administration completely divorced from politics and conducted by men of the highest integrity and ability. What it has been possible for Canada to do ought not to be impossible for us. Yet the American experiments, whether state or national, with the government control of ordinary business have not been such as to inspire great confidence in the immediate results.

The next point would be the involved character of the accounts. This difficulty must indeed not be exaggerated. The farmer now brings his wheat to the local elevators, and these might conceivably be incorporated into the general machinery, even if the plan were adopted whereby each farmer is credited with the balance due him at the end of the year and is debited with his proportion of the costs of losses. The number of accounts would, of course, be prodigious, but probably not greatly in excess of those found in the administration of the income tax or in the transactions of some of our great industrial corporations.

A greater difficulty might be expected to result from the fact that, in contradistinction to what exists in Canada, there are so many different kinds and grades of American wheat. The chief varieties of wheat in the order of importance in their output are

the hard red and the soft red winter, the hard red spring, the white and the durum wheats. The hard red winter, used for flour and grown also in Russia and the Argentine, is the most widespread. Much of it is used to mix with the hard red spring of the northern states and with the soft winter wheat in the other states; the rest forms the bulk of our exports. Almost as common is the soft red winter, used for pastry and bread. As this is widely grown in Europe, little is exported. The hard red spring is of such high gluten content that it is preferred by the millers and fetches a higher price. Since we produce much less of this, it is imported in considerable quantities from Canada, which is the chief producer of this grade. White wheat, found primarily in California and in some of the eastern states, is employed chiefly for breakfast foods and pastry flours, although used to some extent for bread. The Pacific Coast white wheat is largely exported to Asia, although it is grown also in India and Australia. Durum, or very hard spring wheat, is used chiefly for making macaroni, spaghetti, vermicelli and the like. It is also grown in Canada, North Africa and Russia. About half of our crop of this variety is exported, largely to the southern European countries.¹⁴ These various grades of wheat differ considerably

¹⁴ An interesting account of the Canadian wheats, and especially of the Marquis wheat, is found in A. H. Reginald Buller, *Essays on Wheat*, 1919.

in value. The charge or deduction imposed upon the farmer would therefore have to be distributed over these different types or grades, with the consequence that the cheaper grades would bear a greater proportionate burden than the higher grade. Unless very carefully handled, this would engender friction and dissatisfaction.

Another practical difficulty might arise from the inadequacy of the revolving fund. During the War, it will be remembered, Congress appropriated at one time as much as one billion dollars for maintaining the price of wheat alone. A considerably smaller sum would in all probability be sufficient, for the beginning at least. Where, however, the board would face a large world surplus coupled with an excess domestic output in two or three successive seasons, the margin would have to be far greater.

These practical difficulties must therefore not be overlooked. Whether they impose insuperable barriers to success is at least open to question.

The third consideration involves the obstacles to the project arising from divergent interests of other classes. These are three in number: the consumer, the middleman, the foreigner.

In the case of the consumer, as has already been pointed out, the obstacle is not serious. A moderate increase in the price of wheat will not greatly affect the price of bread.

More important is the opposition of the middleman. During the War the middleman upheld the hands of the government and contributed to make the machinery run smoothly; in time of peace his interests would be opposed to the plan. His objections may, however, well be disregarded in favor of the welfare of the larger and more essential group of producers. If his claims were sound there would be little prospect of improving market facilities. Economy and efficiency always imply a lopping off of the relatively useless or expensive intermediaries. The opposition of the middlemen to the Canadian wheat pool has not seriously interfered with its success.

The final obstacle might be expected abroad. The attempt to dump large quantities at reduced prices in foreign countries might awaken unfavorable reactions. Several points, however, are to be considered here.

In the first place, the mere fact of centralizing the operations would not necessarily tend to increase the exportable surplus. If conditions of domestic demand were not seriously altered, the amount available for export would not be greatly increased. But even if it were, the central board would hesitate to sell abroad at greatly reduced prices because that would involve augmented losses. Furthermore, even if there would ensue a fall in world price, it does not

follow that the foreign reaction would be uniformly unfavorable. In a country like Great Britain which imports most of its food, a decrease in the price of wheat might in fact be welcomed. Even in Germany there would be a divergence between the farm and the factory. The agricultural interests would of course resent any further decrease of farm prices; but the industrialists would welcome lower prices of food because that would imply lower costs and thus improve the chances of German industry increasing its exports and helping Germany to pay reparations. What the final reaction would be is unpredictable. But it probably would be unfavorable.

Summing up the preceding considerations, we conclude that, while the project of dealing with the exportable surplus is an interesting one, the attempt to establish price control of wheat through the utilization of the tariff is of doubtful validity. It is problematical in theory and defensible only if it is developed in such a way as not to exert any measurable influence on increased output; the difficulties of practical operation are great; and the obstacles arising from divergent interests are not to be overlooked.

In view, therefore, of the entire situation, a policy of moderation would seem to be wise. At best the project of attempted raising of prices is a huge and difficult experiment. Where the quantities dealt in

aggregate such stupendous figures, even a slight error in business judgment would involve tremendous consequences. Furthermore, the very success of the attempt to raise prices would tend to set in motion those forces which might ultimately bring about an increase of supply and a lower price, so that the final outcome would not be one of permanent amelioration. Even if it were possible to drive the price of wheat up to the full extent of the tariff, it would seem preferable to be content with a less extreme exercise of authority. The more moderate the attempt at rise of price, the smaller would be the difficulties and obstacles to be encountered and the greater would be the chance of success. The farm board would therefore do well, in the beginning at least, to limit its efforts, even in the case of wheat, to the ironing out of the intra-seasonal fluctuations, supplemented by a partial holding over of the surplus to the next season, and to reserve for great emergencies the endeavor to control prices by utilizing the machinery of the tariff. In other words, stabilization, both intra-seasonal and seasonal, rather than conscious price elevation, would be the primary objective.

Having dealt so fully with the case of wheat, we can be more brief for the other crops.

c) PRICE CONTROL IN OTHER PRODUCTS

The cotton problem differs from the wheat prob-

lem in three respects: we export the larger part of our output — between 60 and 70 percent; we have, if not a monopoly, at least a decided advantage in the quality of the product; and thirdly, to the extent that the raw material is utilized at home, changes in the price of cotton will exert more of an effect upon the consumer.

As we import virtually no cotton, there is no possibility of utilizing the tariff for purposes of price control. On the other hand, the chief problems of cotton are the instability of price and the periodic overproduction. The chief function of the farm board would therefore consist in an attempt at stabilization, seasonal as well as intra-seasonal. Season to season stability can be obtained, however, only by means of some arrangement whereby the surplus in any one year may be absorbed and stored for sale in subsequent years. The farm board would have to be in a position to purchase sufficient quantities to maintain the price at a given level. By judicious handling, especially in the foreign market, it might accomplish not a little. The two chief dangers would be the inducement to an increase of output and a succession of unmanageable surpluses. As regards the first point, if the attempt were made to stabilize rather than to increase the price, and if the same plan were applied to the other crops, like wheat and corn, the tendency to augmented output might be held in check, especially if the losses resulting from

increased output and lower price would have to be borne by the growers. As regards the second point, experience has shown that a continued succession of abundant crops is unusual. The revolving fund would, however, have to be large enough to take care of such a contingency.

Corn and oats are in a different position from that of cotton because they are grown almost entirely for home consumption and have only a very small market abroad. The problem of price control would accordingly be quite different. By ridding the home market of a certain surplus, domestic prices could here indeed be raised to a level that would be held down only by the existence of substitutes and by the possibility of increased production. Here again, however, it would be even more difficult than in the case of wheat to levy a countervailing charge or impose the deduction from profits. Moreover, one group of farmers, who consume the corn, would pay for the improvements that would accrue to another group. The farm board could nevertheless find a distinct function to perform in buying, holding and selling the supplies of corn with an attempt primarily at stabilization and with the result of a gradual strengthening of price.

Finally, so far as concerns hogs and pork products, it is clear that a close relationship exists between corn and pork. While it would seem to be advisable

to bring about price adjustment in pork and its products rather than in corn, there are also difficulties in the way. We do not control a sufficient amount of the world's supplies to exert a marked influence upon world prices. We export such large quantities of pork that the attempt to raise domestic prices far above world prices would involve severe hardship on the consumers. Drastic increases in price, moreover, would invite a more extensive use of existing substitutes. Here again, the most valuable services which the farm board could render would be to bring about price stability.

It would seem, then, that the function of the farm board in endeavoring to raise prices must be utilized with extreme circumspection. That the farm board ought to be invested with such powers is perhaps true. Had it been in existence in the years immediately following the crisis of 1920-21, an immense amount of suffering might have been avoided. But at the present time these particular powers of the farm board, if conferred, may well be reserved for periods of striking or undue depression of prices where threatening conditions might call for heroic remedies. In short, while the powers of the farm board might be wide and ample, the exercise of its powers ought to be conducted with moderation and discretion.

CHAPTER VII
CONCLUSIONS

CONCLUSIONS

We thus come to the end of our study. It is time to gather up the threads of the discussion and to present a summary of our conclusions.

In the first chapter we attempted to portray the unsatisfactory condition of the farmer in the larger framework of agricultural development in general. Picturing with broad strokes the history of the nineteenth century, we noted the remarkable progress of the American farmer—a progress punctuated here and there by temporary periods of depression. The present century has witnessed some important changes in the situation, which is at bottom referable to the relations between population and food. During the early years population was growing rapidly and immigration attained unheard-of figures. On the other hand, the limit of free lands had been reached and the rate of increase in agricultural output was reduced. Production of food did not keep pace with growth of population and we were rapidly approaching the normal situation which may be expected ultimately to mark the condition of American agriculture. Then came the World War with its artificial stimulus to the expansion of agricultural production and acreage, its minimum-price fixing, its prodigious

profits and its inflated land values. The ensuing reaction was due to the deflation, to the increase of supply here and abroad, to the collapse of the foreign market, and to the disappearance of price fixing. But while the crisis quickly ceased in industry, and in fact soon led to a period of unparalleled prosperity, the recovery has been very slow in agriculture. In the cattle industry normal conditions have now again been attained, but in farming as a whole the depression has continued.

The causes of this we found to exist not only in the usual economic lag which always attends great price revolutions, but in factors unconnected with war. On the one hand, the increase in the rate of population growth began to slacken and, on the other, agricultural production was growing more rapidly. This, we learned, was due to various causes, like the increased mechanization of agriculture, the decrease in the use of horses and mules, the greater productivity per unit, the shift from less to more productive crops, and the transition in cotton from bad to good lands.

The very progress in the methods of production has therefore combined with the post-War situation to reverse the earlier conditions. Instead of population pressing upon food supply, food supply is pressing upon population; as against the relative shortage and the high prices of the earlier period we are now con-

fronted by the surplus and the low prices of the present. Instead of bringing us closer to the period of deficit farming, we have entered upon a period of excess farming. The higher productivity which would normally be expected to improve the situation of the American farmer has coöperated with increased acreage and diminished demand to accentuate the basic difficulties and to delay the process of readjustment to normal conditions. The problem of paramount importance, however, is whether the present unsatisfactory situation is a merely temporary phenomenon or whether more permanent factors are at work to perpetuate the difficulties of the American farmer. As population grows and the virgin lands disappear, resort will ultimately have to be taken to lower-grade lands. Will this resort to lower-grade lands be counterbalanced by improvements in production and general industrial prosperity? Or will the United States repeat the history of the older countries where agriculture is subordinated to industry and the low-grade farmer is found in association with the high-grade industrial laborer and capitalist? Are we in the presence of general causes which threaten in a more permanent way the old-time primacy and prosperity of the farmer, and which tend to destroy the former balance between agriculture and industry?

Even if we should conclude that the present-day

difficulties are chiefly those of transition, are not the pangs and the pains of readjustment so great and so protracted as to call for some attempts at relief? Is it, in short, desirable to leave the reestablishment of the equilibrium, with all its attendant sufferings, to the blind forces of nature, which may indeed in the end be beneficent in their operation but which involve a period of distress that is at least susceptible of some alleviation

We began our analysis by taking up in the second chapter the economic characteristics of agriculture in so far as they differ from industry. We found the differences to fall under four heads: the costs of production, the costs of disposition, price conditions and more general factors.

Under costs of production we dealt with the greater dependence of agriculture upon nature: the length of the turnover, the smaller possibility of mechanization, the operation of the law of diminishing returns, the lesser transferability of capital and labor, the greater proportion of constant to variable expenses, the lesser control over prices, the different response to the influence of the submarginal laborer and the contrast in labor conditions. So far as concerns the costs of disposition, we learned that these are likely to be greater because agricultural products as a rule are heavier and bulkier,

because they commonly go through a greater number of intermediate stages, and because there is less integration or systematization.

When we came to consider the conditions of price, we found a greater variability in farm prices for several reasons: prices are less amenable to human effort, demand is more sensitive, undersupply is more important than oversupply, there is an agricultural lag, the costs of disposition increase the spread between farm and retail prices, the distinction between shortage and surplus areas is more marked, the influence of recent changes in distribution and consumption is more noticeable, the condition is accentuated in a period of falling prices and the reaction of the price per unit to the total value of the product is considerably greater. The final condition is the tragic fact that the harder a man works and the more he produces, the worse off he may be.

The last distinction between agriculture and industry involves differences in kind as well as in degree. The farmer is an individualist *par excellence*; he is less dependent upon the outsider for his expenditures on food and housing; above all, whereas ordinary activity is a method of business, agriculture is rather a way of life.

Building on the basis of these broad differences, we next took note, in Chapter III, of the problems

that face the farmer. We found that these may be divided into three categories, according as we consider their period, their extent, or their source.

From the point of view of the period, they may be classified into permanent, protracted or emergency problems; from the point of view of their extent, they are either universal or particular problems; from the point of view of source or origin, they are either world or domestic problems.

Starting out with the last category, we found the world problems of the farmer to be related to the general level of prices, and we distinguished in this respect the two aspects of change in the general price level: the one connected with business cycles, the other related to more exceptional cataclysms, like war. We found that in both cases, while periods of prosperity and depression, of inflation and deflation, sometimes occur in agriculture and industry at the same time, the movements at other periods proceed not in harmony but in contrast. We sought to illustrate the reasons why industry has recovered so rapidly from the crisis of 1920, while agriculture has made a far slower progress in readjustment. Coming to the farmers' problems which are more specifically referable to domestic rather than to world causes, we found that they might be classed into the two main categories of cost and price problems, in each of which it is necessary to distinguish between the

long-time and the short-time questions, between the universal and the particular considerations.

The problems of cost we discussed under the four heads of production, disposition, consumption and taxation. In the cost of production we dealt on the one hand with the factors of production and on the other with the technique of production. We saw that whereas the latter class of problems are of a more general and long-time nature, there are questions of particular urgency connected with the former class. In the utilization of submarginal land, in the employment of high-wage labor and in the lack of suitable credit facilities we found a recent aggravation of the farmer's difficulties.

The problems connected with the costs of disposition we discovered chiefly in the fields of transportation and of handling. Railroad rates have not diminished with the recent fall of prices, and water transportation is largely lacking. The handling problems of chief significance we found to relate to speculation and marketing. Speculation, as we saw, is a Janus-faced phenomenon, tending on the one hand to stabilize prices but occasionally producing the opposite effect. The marketing machinery, on the other hand, is frequently characterized by waste and duplication of efforts.

The third phase of the farmer's cost problems deals with his outlays for commodities, whether for

consumption or for production. The disparity between what the farmer gets and what he pays is closely connected with the question of the tariff. Our analysis led us to the conclusion that while the protective tariff has in many respects benefited the farmer, it has in recent years played an undoubted rôle in accentuating his difficulties.

The final problem of agricultural costs or outlay concerns taxation. Here we were led to the conclusion that the farmer is today bearing both absolutely and relatively a disproportionate burden of state and local taxation.

In contrast to the cost problems of the farmer we put the price problems. We learned that the chief price problems revolve around the two points of instability and depression.

Instability is due in the first place to the hazards connected with the physical output. As over against the uncertainty in the size of the crop, we found that the uncertainty in the price per unit depended on seasonal, intra-seasonal and cyclical variations. This analysis brought into relief the present importance of the surplus problem.

The other phase of the price problem has to do with the depression of price. Low prices of agricultural products, we found, may be regarded from both an absolute and a relative point of view. Directing attention to the factors which have brought

about low prices in themselves, we noted the causes that have been responsible for agricultural prices falling out of gear with industrial prices. We concluded that the chief difficulties of the present-day farmer are due to excessive costs, to uncertainties of returns, and to inadequacy of price, and that they may be summed up under the heads of instability and inequality. The causes of the trouble were found to be partly natural and inevitable, and partly artificial and remediable.

On the basis of this analysis, we proceeded in Chapter IV to discuss the possibilities and agencies of improvement. Adverting to the difficulties connected with the solution of the long-time problems, we saw somewhat more hope in dealing with the relatively short-time problems and still more in coping with the emergency problems.

So far as concerns the agencies of improvement, we found these to consist in individual action, in coöperative action and in government or political action.

In connection with individual action we discussed the development of intelligence and the progress of large-scale operations. While ascribing some importance to these, we found them incompetent to deal with the more difficult phases of the situation.

Associated action has assumed the form of the coöperative movement. Here we attempted to point

out the actualities and the possibilities of success and called attention to what has already been accomplished in the field of marketing as well as in the domains of production and consumption. We proceeded then to dwell on their limitations and the obstacles in the path of their grappling with the more fundamental problems involved. Our conclusion was that while both individual and coöperative action have definite functions to perform, neither is adequate to meet the underlying difficulties of the situation. We were led, therefore, to consider the possibilities of government action, taking a middle ground between the policy of inaction or *laissez-faire*, and that of drastic interference or socialism. We concluded that there was a distinct field for government action.

This we endeavored to outline in Chapter V as a program of farm relief, pointing out that it must be built partly upon general legislation and partly upon specific effort. Reverting to our former analysis, we considered first the world problems. Here it was obvious that the most important phase of government effort must be devoted to the elimination of war, to the abandonment of our traditional policy of isolation and to coöperation with other nations in endeavoring to maintain a more stable price level. As opposed to the world problems, we found that the domestic problems in which there was some possibil-

ity of government action might be referred to the functions of regulation, of equalization, of education and of price modification.

The function of regulation comprises the fields of speculation and transportation. In speculation we concluded that the government need only develop the existing agencies which are endeavoring to deal with the dangers of excessive manipulation of price. In transportation we called attention to the desirability of lowering agricultural class rates. This consummation depended, in our opinion, upon a modification of the general theory of railroad rates as handled by the Interstate Commerce Commission. Our discussion pointed to two possible developments: the creation of regional groups calculated to combine within each system the agricultural as well as the industrial roads; and the readiness on the part of government to defray the deficit which might result from lower agricultural rates. This we considered preferable to the only other alternative, which is government ownership and operation. So far as concerns water transportation, we concluded that the time had not yet come for the expenditure of the billions of dollars requisite for this purpose, and that the same objects could be secured more cheaply and on the whole more equably by devoting the funds to land rather than to water transportation.

The function of equalization has to deal, we found,

with credit, with taxation and with the tariff. While much progress has been made in the provision of credit facilities, not a little still remains to be done, especially in the direction of bridging over the emergency situation. In taxation we discovered the best outlook to consist in a change in the relations of local to state outlays and in the gradual substitution of income taxes for general property taxes, and called attention to the possibility of help emanating from the national government. As to the tariff, we concluded that a reversal of the policy of industrial protection is not immediately to be expected, and that an increase in agricultural protection can be of little avail in most of the cases where we are still on an export basis.

Proceeding to the function of education, we saw that admirable progress has already been made in the collection of information, the development of research, the dissemination of statistics and the imparting of advice. In the still more important functions that cluster around price modification, we pointed out that we need primarily men of action rather than men of learning. This naturally brought us to the next chapter, where we discussed the functions of a farm board.

A farm board would have, in our opinion, major and minor functions to perform. The minor functions would include those of acting as a center for

discussing the legitimate demands of the farmer and assisting him, to secure needed readjustments in credit, taxation and the tariff; of establishing model farms and model farm communities; and of undertaking a better classification of land.

The major functions of the farm board would consist in the endeavor to exert some influence on the more basic price factors. Making a distinction between price fixing, price control and price influencing, we found that the four possible functions of a farm board comprise the elimination of uncertainty, the treatment of the submarginal lands, the reduction of fluctuations and the control or elevation of price.

The elimination of uncertainty brought up the problem of insurance. Here we distinguished between calamity and price insurance, and took the position that the former only is susceptible of successful accomplishment. The function of the farm board would consist in developing a method of re-insuring the risks which might be undertaken by private companies or by coöperatives under government aegis.

The treatment of submarginal lands is one of peculiar urgency at the present time when an outstanding difficulty consists in the relative oversupply of the agricultural area. Here we pointed out that there is a possibility of combining the

farmer's advantage with the benefits of conservation and of embarking upon a policy of purchase and reforestation of submarginal lands in various parts of the country. This we considered would exert a perceptible influence upon agricultural prices.

In the matter of stabilization we learned that the problem of intra-seasonal fluctuations has become vastly more important of recent years. An essential function of the farm board should therefore be to create and to assist the growth of the coöperatives in their endeavor to promote proper classification and grading, to eliminate unnecessary and wasteful activities of the middlemen, and to find the most profitable market for the particular product. The chief activity of a farm board, however, must be devoted to securing a more equable feeding of the supply to the market throughout the season, which can be accomplished only by controlling, through the proper organizations or corporations, each respective crop as a whole.

When we deal with the fluctuations from year to year and with the more general factors involved, we come to the problem of raising prices. We found that the conditions of successful price control are threefold: it must operate over a substantial part of the supply, it must not lead to a considerable falling off in the demand, it must not engender any great increase of supply. Discussing the problem in its

application both to perishable and to non-perishable crops, we concluded that the prospects of success, apart from the administrative considerations, depended upon a variety of conditions, of which the most important are the existence of an export market, the probability of substitutes, and the prospects of increased output.

Taking up the problem with special reference to wheat and analyzing the project embodied in the McNary-Haugen bills, we endeavored to discuss its soundness in principle, its difficulties in practice and the obstacles arising from opposing interests. Our conclusion was that the attempt to deal with the exportable surplus with the aid of the tariff is somewhat questionable. It is problematical in theory, promising success only on condition that it is developed in such a way as not to exert any measurable influence on increased output; the difficulties of practical operation are great, although perhaps not insurmountable; and the obstacles arising from divergent interests are not to be overlooked. At best the attempt to raise the domestic over the export price level would involve a huge and difficult experiment. The farm board will therefore do well to limit its efforts, at the beginning at least, to stabilization — that is, the ironing out of seasonal as well as of intra-seasonal fluctuations — and to reserve its endeavor to deal with the export surplus through the

agency of the tariff to periods when an especially great depression of price may be expected. We found that in the other staple commodities it would be still more complicated to deal separately with the export surplus and that it would be even more advisable to proceed with circumspection and moderation.

The final conclusion at which we arrived may therefore be summed up in a few words. The farmer's problem is in large part a problem of readjustment. The acuteness of the situation will disappear as has been the case in previous periods of depression. But the pains of the transition may be alleviated by remedial action. Moreover, there remains a substantial substratum of more permanent conditions. There are at work fundamental causes of both a world and a domestic character which render the position of the farmer relatively more difficult and which tend to menace his continued equality with industry. Government can indeed provide no panacea, nor can it reverse the operation of factors that depend upon forces beyond its control. But in the more modest task of removing obstacles, of affording opportunities, of equalizing conditions, of taking emergency action and of rendering aid where it is imperatively needed, a government farm board can do its share in helping to preserve the old-time American farmer and in leading him on to ever newer levels of prosperity and contentment.

BIBLIOGRAPHY

BIBLIOGRAPHY

- Adams, A. B., *The Marketing of Perishable Food Products*, New York, 1916.
- Alexander, Magnus W., *The Business Man's Concern in American Agriculture*, New York, 1926.
- Anderson, Benjamin M., Jr., *Artificial Prices a Menace to Economic Stability: The Farmers' Problem and the Revised McNary-Haugen Bill*, Chase Economic Bulletin, 1924.
- Auge-Laribé, Michel, *Agriculture during the War*, New York, 1925.
- Baker, O. E., *Population, Food Supply and American Agriculture*, Washington, 1927.
- Bean, L. H., *Some Interrelationships between the Supply, Price and Consumption of Cotton*, Washington, 1928.
- Bennett, Merrill K., *Farm Cost Studies in the United States*, Stanford University, 1928.
- Black, J. D., *Introduction to Production Economics*, New York, 1926.
- Booth, J. F., *Coöperative Marketing of Grain in Western Canada*, Washington, 1928.
- Boyle, James E., *Farm Relief*, New York, 1928.
- Brand, Charles J., *The Price Balance between Agriculture and Industry*, New York Academy of Political Science, 1925.
- Brannen, C. O., *Relation of Land Tenure to Plantation Organization*, Washington, 1924.
- Buller, A. H. R., *Essays in Wheat*, New York, 1919.

- Carlin, George C., *Coöperative Marketing of Cotton*, Washington, 1926.
- Eastman, E. R., *These Changing Times*, New York, 1927.
- Eliot, Clara, *The Farmers' Campaign for Credit*, New York, 1927.
- Elsworth, R. H., *Agricultural Coöperative Associations, Marketing and Purchasing, 1925*, Washington, 1928.
- Ely, R. T., and Morehouse, E. W., *The Elements of Land Economics*, New York, 1926.
- Enfield, R. R., *The Agricultural Crisis, 1920-1923*, London, 1924.
- Engberg, Russell C., *Industrial Prosperity and the Farmer*, New York, 1927.
- Englund, Eric, *Fallacies of a Plan to Fix Prices of Farm Products by Government Control of the Exportable Surplus*, reprint from *Journal of Farm Economics*, 1923.
- Gibbons, C. E., *Market Classes and Grades of Livestock*, Washington, 1926.
- Gini, Corrado, *Report on the Problem of Raw Materials and Foodstuffs*, Geneva, 1921.
- Goldstein, Benjamin F., *Marketing: A Farmer's Problem*, New York, 1928.
- Gray, L. C., *Introduction to Agricultural Economics*, New York, 1927.
- Gregory, Clifford V., *A National Policy for Agriculture*, reprint from *The Prairie Farmer*, 1928.
- Haas, G. C., and Ezekiel, M., *Factors Affecting the Price of Hogs*, Washington, 1926.
- Henry, A. J.; Kincer, J. B.; Frankenfield, H. C.; Greg, W. R.; Smith, B. B.; and Munn, E. N., *Weather and Agriculture*, Washington, 1924.

- Hibbard, Benjamin H., *Marketing Agricultural Products*, New York, 1921.
- Hobson, Asher, *Sales Methods and Policies of a Growers' National Marketing Agency*, Washington, 1923.
- Hoffman, C. W., *Crop Insurance: Its Present Accomplishments and Its Possibilities*, Philadelphia, 1925.
- Holmes, C. L., *Economics of Farm Organization and Management*, New York, 1928.
- Jardine, W. M., *Stabilizing Farm Prices*, 1927.
- Killough, Hugh B., *What Makes the Price of Oats*, Washington, 1925.
- Mackintosh, W. A., *Agricultural Coöperation in Western Canada*, Kingston, 1924.
- *The Canadian Wheat Pools*, Kingston, 1925.
- Mead, Edward S., and Ostrolenk, B., *Harvey Baum: A Study of the Agricultural Revolution*, Philadelphia, 1928.
- Meyer, Eugene, Jr., *Farm Financing and Business Prosperity*, Milwaukee, 1922.
- and Mondell, F. W., *Report to the President on the Wheat Situation*, Washington, 1923.
- Miller, John D., *The General Agricultural Situation*, Milwaukee, 1927.
- Moore, Henry L., *Forecasting the Yield and the Price of Cotton*, New York, 1917.
- Morman, J. B., *The Principles of Rural Credits*, New York, 1915.
- Nixon, W. L., *Weather Damage to Cotton*, Washington, 1926.
- Nourse, Edwin G., *Agricultural Economics*, Chicago, 1916.
- *American Agriculture and the European Market*, New York, 1924.

- *The Legal Status of Agricultural Coöperation*, New York, 1924.
- Olsen, N. A.; Brannen, C. O.; Cadisch, G. F.; and Newton, R. W., *Farm Credit, Farm Insurance and Farm Taxation*, Washington, 1924.
- Patton, F. Lester, *Diminishing Returns in Agriculture*, New York, 1926.
- Patton, Harald S., *Grain Growers' Coöperation in Western Canada*, Cambridge, 1928.
- Peek, George N.; Davis, Chester C.; and Stamp, Sir Josiah, *The Agricultural Problem of the United States*, Washington, 1926.
- Price, H. B., *The Marketing of Farm Products*, Minneapolis, 1927.
- Randall, C. G., *Coöperative Marketing of Livestock in the United States by Terminal Associations*, Washington, 1928.
- Schultz, Henry, *Statistical Laws of Demand and Supply with Special Application to Sugar*, Chicago, 1928.
- Sering, M., *International Price Movements and the Condition of Agriculture in Non-tropical Countries*, Berlin, 1927.
- Smith, Bradford R., *Factors Affecting the Price of Cotton*, Washington, 1928.
- Spillman, W. G., *Balancing the Farm Output*, New York, 1927.
- *Farm Management*, New York, 1923.
- and Lang, E., *The Law of Diminishing Returns*, New York, 1924.
- Tolley, H. R.; Black, J. D.; and Ezekiel, M. J. B., *Input as Related to Output in Farm Organization and Cost-of-Production Studies*, Washington, 1924.

- Truesdell, Leon E., *Farm Population in the United States*, Washington, 1927.
- Turner, Howard A., *The Ownership of Tenant Farms in the United States*, Washington, 1926.
- Valgren, V. N., *Crop Insurance*, Newark, 1923.
- Wallace, Henry C., *Our Debt and Duty to the Farmer*, New York, 1925.
- *The Wheat Situation: A Report to the President*, Washington, 1923.
- Warren, G. F., and Pearson, F. A., *The Agricultural Situation*, New York, 1924.
- *Interrelationships of Supply and Price*, Ithaca, 1928.
- Weld, L. D. H., *The Marketing of Farm Products*, New York, 1916.
- Weitz, B. O., *The Trend toward a More Effective Use of the Land as Shown by the Yield per Acre of Certain Crops*, Washington, 1926.
- Working, Harold, *Factors Determining the Price of Potatoes*, St. Paul, 1922.
- Wright, Sewall, *Corn and Hog Correlations*, Washington, 1925.
- Yoakum, B. F., *Coöperative Stabilized Marketing of Farm Commodities*, New York.
-
- “Wheat Studies, Food Research Institute,” Stanford University, 1924-28, Vols. I-V., especially the following contributions by Alonzo E. Taylor and Joseph S. Davis: *The Dispensability of a Wheat Surplus in the United States*, Vol. I, No. 4.
- A National Wheat-Growers' Coöperative: Its Problems, Opportunities and Limitations*, Vol. II, No. 3.

- *The Legal Status of Agricultural Coöperation*, New York, 1924.
- Olsen, N. A.; Brannen, C. O.; Cadisch, G. F.; and Newton, R. W., *Farm Credit, Farm Insurance and Farm Taxation*, Washington, 1924.
- Patton, F. Lester, *Diminishing Returns in Agriculture*, New York, 1926.
- Patton, Harald S., *Grain Growers' Coöperation in Western Canada*, Cambridge, 1928.
- Peek, George N.; Davis, Chester C.; and Stamp, Sir Josiah, *The Agricultural Problem of the United States*, Washington, 1926.
- Price, H. B., *The Marketing of Farm Products*, Minneapolis, 1927.
- Randall, C. G., *Coöperative Marketing of Livestock in the United States by Terminal Associations*, Washington, 1928.
- Schultz, Henry, *Statistical Laws of Demand and Supply with Special Application to Sugar*, Chicago, 1928.
- Sering, M., *International Price Movements and the Condition of Agriculture in Non-tropical Countries*, Berlin, 1927.
- Smith, Bradford R., *Factors Affecting the Price of Cotton*, Washington, 1928.
- Spillman, W. G., *Balancing the Farm Output*, New York, 1927.
- *Farm Management*, New York, 1923.
- and Lang, E., *The Law of Diminishing Returns*, New York, 1924.
- Tolley, H. R.; Black, J. D.; and Ezekiel, M. J. B., *Input as Related to Output in Farm Organization and Cost-of-Production Studies*, Washington, 1924.

- Truesdell, Leon E., *Farm Population in the United States*, Washington, 1927.
- Turner, Howard A., *The Ownership of Tenant Farms in the United States*, Washington, 1926.
- Valgren, V. N., *Crop Insurance*, Newark, 1923.
- Wallace, Henry C., *Our Debt and Duty to the Farmer*, New York, 1925.
- *The Wheat Situation: A Report to the President*, Washington, 1923.
- Warren, G. F., and Pearson, F. A., *The Agricultural Situation*, New York, 1924.
- *Interrelationships of Supply and Price*, Ithaca, 1928.
- Weld, L. D. H., *The Marketing of Farm Products*, New York, 1916.
- Weitz, B. O., *The Trend toward a More Effective Use of the Land as Shown by the Yield per Acre of Certain Crops*, Washington, 1926.
- Working, Harold, *Factors Determining the Price of Potatoes*, St. Paul, 1922.
- Wright, Sewall, *Corn and Hog Correlations*, Washington, 1925.
- Yoakum, B. F., *Coöperative Stabilized Marketing of Farm Commodities*, New York.

“Wheat Studies, Food Research Institute,” Stanford University, 1924-28, Vols. I-V., especially the following contributions by Alonzo E. Taylor and Joseph S. Davis: *The Dispensability of a Wheat Surplus in the United States*, Vol. I, No. 4.

A National Wheat-Growers' Coöperative: Its Problems, Opportunities and Limitations, Vol. II, No. 3.

The McNary-Haugen Plan as Applied to Wheat: Operating Problems and Economic Consequences, Vol. III, No. 4.

The McNary-Haugen Plan as Applied to Wheat: Limitations Imposed by the Present Tariff, Vol. III, No. 5.

Journal of Farm Economics, *passim*, especially:

"The Outlook for Agriculture," by Nourse, Carver, Warren, Hibbard and Stone, Vol. IX, No. 1, 1927.

"What Does Agriculture Need — Readjustment or Legislation?" by Warren, Wehrwein, Davis and Stewart, Vol. X, No. 1, 1928.

The Agricultural Situation in the United States, The Annals of the American Academy of Political and Social Science, Vol. CXVII, Philadelphia, 1925.

The Future of Prices at Home and Abroad, Proceedings of the Academy of Political Science, Vol. XI, No. 2, New York, 1925.

REPORTS

Report of the Joint Commission of Agricultural Inquiry, Washington, 1921-22, 4 vols.

Report of the National Agricultural Conference, Washington, 1922.

Report of the President's Agricultural Commission, Washington, 1924.

Report of the American Council of Agriculture, Washington, 1924.

The Agricultural Problem in the United States, The National Industrial Conference Board, New York, 1926.

The Condition of Agriculture in the United States and Measures for Its Improvement; A Report by the Busi-

- ness Men's Commission on Agriculture*, Washington, 1927.
- Report on the Agricultural Situation by the Special Committee of the Associations of Land Grant Colleges and Universities*, Chicago, 1927.
- The McNary-Haugen Bill: Report of Mr. Haugen, from the Committee on Agriculture*, 68th Congress, 1st Session, H. Rept. 631, Washington, 1924.
- Surplus Control Act: Veto Message from the President of the United States*, 69th Congress, 2d Session, Senate Doc. 214, Washington, 1927.
- The Agricultural Surplus Control Bill: Report of Mr. Haugen, from the Committee on Agriculture*, 70th Congress, 1st Session, H. Rept. 1141, Washington, 1928.
- Veto Message Relating to the Agricultural Surplus Control Act from the President of the United States*, 70th Congress, 1st Session, Senate Doc. 141, Washington, 1928.
- The McNary-Haugen Bill, Second Veto Message: An Analysis and Reply, Written by Agricultural Service, for Farm and Coöperative Marketing Associations*, May, 1928.
- Report of the Federal Trade Commission on the Grain Trade*, Washington, 1926, 7 vols.
- Coöperative Marketing: Letter from the Chairman of the Federal Trade Commission . . . in Response to Senate Resolution, etc.*, Washington, 1928.
- Report of the Royal Grain Inquiry Commission*, Ottawa, 1925.
- Fluctuations in Wheat Futures: Letter from the Secretary of Agriculture in Response to Senate Resolution No.*

222, 69th Congress, 1st Session, Doc. 135, Washington, 1926.

Report of the Committee on Stabilization of Agricultural Prices, Ministry of Agriculture and Fisheries, London, 1925.

Report of the Royal Commission on Food Prices, London, 1925.

HEARINGS

Investigation of Crop Insurance: Hearings before a Select Committee on Investigation of Crop Insurance, United States Senate, 67th Congress, 4th Session, Washington, 1923.

McNary-Haugen Bill: Hearings before the Committee on Agriculture, House of Representatives, 68th Congress, 1st Session, H. Rept. 5563, Washington, 1924.

The McNary-Haugen Bill: Joint Hearings before the Committee on Agriculture and Forestry, United States Senate, and the Committee on Agriculture, House of Representatives, 68th Congress, 2d Session, Senate Doc. 4206 and H. Rept. 12127, Washington, 1925.

Agricultural Relief: Hearings before the Committee on Agriculture and Forestry, United States Senate, 69th Congress, 1st Session, Washington, 1926.

To Promote Coöperative Marketing: Hearings before the Committee on Agriculture and Forestry, United States Senate, 69th Congress, 1st Session, Washington, 1926.

Agricultural Relief: Hearings before the Committee on Agriculture, House of Representatives, 70th Congress, 1st Session, Washington, 1928.

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OTHER WORKS BY THE SAME AUTHOR

PRINCIPLES OF ECONOMICS: 11th edition, 1926; Russian translation, 1907; Japanese translation, 1907; French translation, 1927

ESSAYS IN TAXATION: 10th edition, 1925; French translation, 1914; Russian translation, 1919

THE ECONOMIC INTERPRETATION OF HISTORY: 2d edition, 1907; Japanese translation, 1905; Russian translation, 1906; Spanish translation, 1907; French translation, 1910; Chinese translation, 1920; Armenian translation, 1922

THE SHIFTING AND INCIDENCE OF TAXATION: 5th edition, 1926; Italian translation, 1900; Japanese translation, 1910; French translation, 1911; German translation, 1927; Czech translation, 1927; Russian translation, 1927

PROGRESSIVE TAXATION IN THEORY AND PRACTICE: 2d edition, 1908; French translation, 1908; Spanish translation, 1913

THE INCOME TAX: 2d edition, 1914; French translation, 1913; Russian translation, 1922

CURRENCY INFLATION AND PUBLIC DEBTS: 1921

ESSAYS IN ECONOMICS: 1925

STUDIES IN PUBLIC FINANCE: 1925

THE ECONOMICS OF INSTALMENT SELLING: 1927; German translation, 1929; French translation, 1929; Spanish translation, 1929

DOUBLE TAXATION AND INTERNATIONAL FISCAL COÖPERATION: 1928; French translation, 1929